

U.S. Department
of Transportation

United States
Coast Guard



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MEMORANDUM

From: 
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Reply to: J. Johnson
Attn of: 206-220-7350

To: DISTRIBUTION

Subj: USCG FDCC PACIFIC ARCHITECT/ENGINEER GUIDE, THIRD EDITION

1. Enclosed is a copy of the Third Edition of the A/E Guide. This edition replaces the Second Edition in its entirety.
2. This edition is a complete rewrite of the guide. It is now organized around the specific responsibilities of the A/E and Engineer-in-Charge (EIC) during each project phase and is aligned with our current team organization and processes.
3. All FD&CC (Pacific) EICs, Designers, Project Managers and Contracting Officers should review this new edition upon receipt and ensure that A/E Contracts under their management are performed in accordance with its procedures and criteria.

#

Enclosure: A/E Guide, Third Edition

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DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD



**ARCHITECT-ENGINEER
GUIDE**

Third Edition

November 2002

FACILITIES DESIGN AND CONSTRUCTION CENTER (Pacific)
915 SECOND AVE, Room 2664
SEATTLE, WASHINGTON 98174

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FACILITIES DESIGN AND CONSTRUCTION CENTER (PACIFIC)

Statement of Work, Appendix A

ARCHITECT-ENGINEER GUIDE

Forward

This manual provides guidance to Architect-Engineer (A/E) firms performing services for the Department of Transportation, United States Coast Guard, Facilities Design and Construction Center Pacific (FD&CC Pac). This edition is a complete rewrite of the previous manual and supercedes it in its entirety.

The purpose of this publication is to:

- Provide detailed and specific information on the requirements included in the Statement of Work;
- Provide broad design guidance to firms performing work for the Facilities Design and Construction Center (Pacific);
- Present a clear understanding of our administrative procedures;
- Obtain uniformity of drawings, specification, cost estimates and other deliverables;
- Minimize the time spent by A/E and Coast Guard personnel on administrative details so that they may focus attention on the technical content of the design product.

The publication is, in general, written in chronological order to follow the overall project development process.

It is made up of three major components: two Sections and the appendices.

Section One – Organization, Objectives and Administration outlines the general and specific responsibilities of the A/E.

Section Two – Engineering and Design Services outlines the procedures and content for contract deliverables.

The appendices contain supplemental information concerning design standards, format of deliverables and contract forms.

Suggestions for refinement and improvement of this Publication will always be appreciated and considered.

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SECTION ONE – ORGANIZATION AND ADMINISTRATION**Chapter 1 ORGANIZATION AND OBJECTIVES****A. Purpose**

The purpose of this publication, referred to as the "A/E Guide", is to inform Architect/Engineer (A/E) firms of the administrative and technical requirements for providing professional services to the Facilities Design and Construction Center Pacific (FD&CC). The A/E Guide is part of the A/E firm's contract. It is essential that it is reviewed thoroughly prior to submission of an A/E fee proposal and that it be referred to throughout the execution of the A/E contract. Special emphasis should be placed on Chapter 2 which discusses scope and cost limitations as well as other specific contract requirements. Questions concerning the requirements of this publication should be addressed to the FD&CC Engineer-in-Charge (EIC).

B. Introduction

This Chapter outlines the purpose of this Publication, the major objectives of FD&CC's facility design program and how those objectives relate to your design contract. It also outlines the organization and general responsibilities of the joint FD&CC – A/E Project Team.

C. Contract Clauses

The A/E should review the standard "Architect-Engineer Contract Clauses". These clauses are incorporated by reference as part of the A/E firm's contract with FD&CC. Upon request, the Contracting Officer will provide copies of the applicable contract clauses. They are also available online at <http://www.arnet.gov/far/>. When reviewing clauses online, A/E's are cautioned to verify that the effective date of the clause corresponds to the clause incorporated in the contract.

D. Design Philosophy

Our design philosophy is one of responsive, responsible, and defensible design for Coast Guard shore facilities with a commitment to design principles and practices that are requirements-based, logical, and conservative. Our designs must produce facilities that are safe, functional and cost effective. They must respond to user needs, but reflect a responsible use of public funds. They must be defensible in terms of scope, cost, and appearance. Appropriate, defensible design is:

- Well planned
- Effective in function
- Appropriate in form and appearance
- Cost-effective
- Constructable
- Easy to maintain
- Adaptable and durable over time in the operating environment giving proper weight to each of the above elements

Monumental structures, stylistic applications of ornament, extreme configurations, excessive automation/mechanization, poor choices of utility, electrical or HVAC systems; and exotic landscaping or materials are inconsistent with our objective to create pleasant, efficient and cost effective facilities.

E. Implementation

Before beginning the design, the A/E should review current criteria, instructions and other information provided by FD&CC; make a thorough study of conditions at the site and of the requirements of the project. If, after an analytical review, the A/E is of the opinion that a deviation from instructions, USCG criteria or building codes would be of benefit to the Government, the A/E shall bring the matter to the attention of the Engineer-In-Charge (EIC) for a decision. FD&CC encourages the A/E to use ingenuity and professional expertise to develop the best possible design for all elements of the project within the constraints imposed. However, the use of untried concepts and materials for which no "track record" exists is discouraged.

F. Design Considerations: Private vs. Government Design

There are certain basic differences between private and Government design, which must be thoroughly understood by the A/E. Failure to grasp these basic differences in rules and policies has been the source of many costly disputes. These are:

1. **Open Bidding.** FD&CC cannot limit bidding to a selected list of Contractors known to do good work. Any Contractor may bid. Therefore, drawings and specification requirements must leave little to the imagination. They must be clear, concise, detailed, and thoroughly coordinated.
2. **Non-proprietary Materials.** Specifications shall be "nonproprietary" and allow full and open competition in the expenditure of public funds.
3. **Verification of Existing Features.** FD&CC can not require bidders to visit the project site prior to submitting a bid. Therefore, to avoid claims and extra costs, it is important that existing features are adequately and correctly shown on the drawings and described in the specifications in sufficient detail to allow the contractor to bid the work without visiting the site.
4. **Contractor Options.** Drawings and specifications may be prepared to give the Contractor a choice of materials or methods when optional materials or methods would be equally satisfactory for the purpose and are comparable in cost. Optional designs are permitted, such as hemispherical bottom or semi-ellipsoidal bottom for an elevated steel water tank. However, the right to select an option, that meets the contract's requirements, rests with the Contractor.
5. **Buy American Act.** The BUY AMERICAN ACT requires that only domestic construction materials and equipment will be specified and used in Government Contracts. However, this Act has recently been modified to allow the use of products from Canada, Mexico, and the European Community on projects with an estimated acquisition value of \$6.5 million or more.

6. **Alternative Bids.** The use of alternative bids is not allowed. This is due to the difficulty in evaluating the bids when alternate pricing schemes have been proposed. Additive and optional bid items can be used, but only with the express approval of the EIC and the Contracting Officer (KO).

G. Project Team Organization and Responsibilities

1. Project Team Organization:

Exhibit 1.1 contain(s) a generic project team organization chart for a typical project.

During the design phase of the project the A/E's primary technical contact is the FD&CC design project manager called the "Engineer-in-Charge" (EIC).

Construction Administration for FD&CC projects is handled by in-house resources and led by the FD&CC construction "Project Manager" (PM). The PM is the primary technical contact during this phase.

It is important to note that the flow of information from FD&CC to the A/E project manager and from the A/E Team is through the A/E PM to the EIC (or PM).

For both phases, the Contracting Officer retains sole authority over the A/E Contract.

2. Project Team Responsibilities:

a. Contracting Officer (KO):

The KO has full and final authority over all aspects of contract administration.

The KO's responsibilities include:

- awarding A/E contracts and modifications
- reviewing and signing all contract correspondence and documents
- authorizing pay requests
- interpreting contract documents
- ensuring the contract is executed in accordance with federal, department and agency acquisition regulations

b. Engineer-In-Charge (EIC):

The EIC has the Government lead during design and is responsible for overall project management and certain delegated responsibilities for contract administration.

The EIC responsibilities include:

- Identifying and coordinating design scope with the customer
- A/E contract administration

- managing and coordinating the project team
- providing technical input to the A/E design team
- approving the technical adequacy of the design solution
- managing customer concerns and expectations
- managing the project budget
- managing other design support contracts

c. Construction Project Manager (PM):

The PM has the Government lead during construction and is responsible for overall project management and certain delegated responsibilities for contract administration.

The PM responsibilities include:

- A/E contract administration of construction phase services
- construction contract administration,
- managing customer concerns and expectations
- managing the project budget
- managing other construction support contracts

d. Architect Engineer (A/E):

The A/E is responsible for producing the design documents and other deliverables as defined in the contract, and providing construction support services as defined in the Contract, Statement of Work (SOW) and this publication.

e. Benefiting Unit (Customer):

The Benefiting Unit, end users, or customers while not direct members of the project team are, nonetheless, the most important stakeholders in the project and are the only reason the project exists. They are responsible for clearly articulating their needs to the team and, obviously, occupying, using and maintaining the final product.

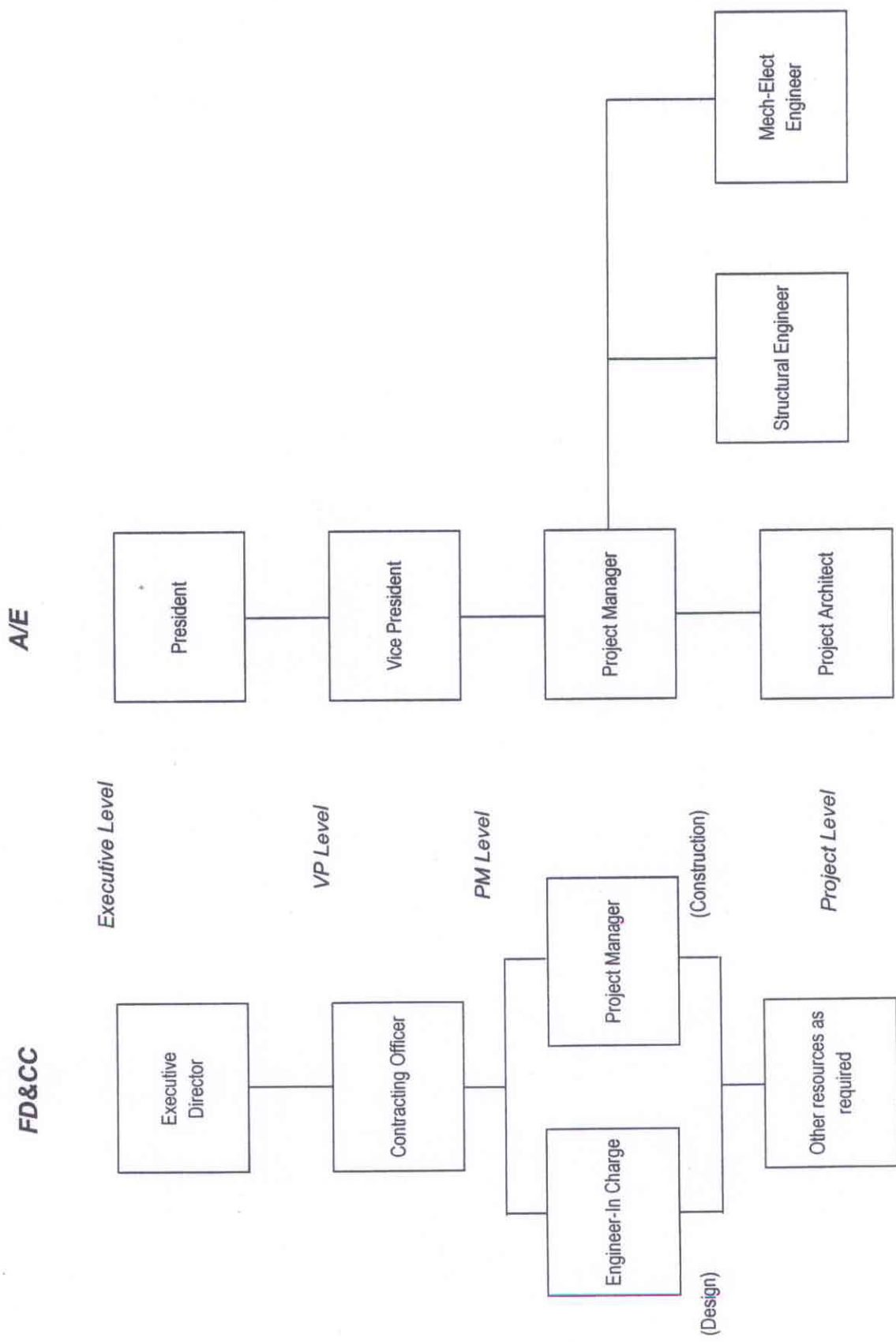


Exhibit 1.1
Project Organization Chart

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Chapter 2 OVERVIEW OF THE COAST GUARD PLANNING AND DESIGN PROCESS

A. General

The purpose of this Chapter is to provide the A/E an overview of the Coast Guard planning and design process. While the Statement of Work clearly defines the deliverables that are part of that process, it is important that the A/E understand the steps of the design process and how A/E deliverables are used in the review, evaluation and approval of projects by the Coast Guard.

B. The Planning and Design Process

The Coast Guard's planning and design process, formally known as the "Shore Facilities Planning and Management System", is the process whereby the Agency identifies, develops, evaluates and executes capital improvement projects. Like many institutions or agencies, the process consists of a number of discrete steps during which the project is refined and submitted to a central reviewer for approval, prioritization and budgeting. The major steps in this process are described below and illustrated in Exhibit 2.1.

1. Project Identification - "Problem Statement"

A project is first identified through the development of a document called a "Problem Statement". The Problem Statement may be generated from a variety of CG sources (units, staffs, planners, etc.) and is generally driven by plant degeneration, mission changes, master plans or environmental requirements. It identifies the current state, desired state and impact of the problem, significant issues surrounding the problem, range of potential solutions and order of magnitude cost estimate for the project. It is submitted up the organizational chain through various staffs (District, Area, and Maintenance and Logistics Commands) to Coast Guard Headquarters, Office of Civil Engineering (G-SEC) for project approval.

2. Project Tracking and Prioritization - "Shore Facilities Requirements List (SFRL)"

If a Problem Statement is approved, the project is entered into the Coast Guard's project backlog system known as the Shore Facilities Requirements List or "SFRL". The SFRL is prioritized to ensure that limited resources are applied to facility needs in the best possible order that will most benefit the Coast Guard.

3. Evaluation of Operational Alternatives - "Planning Proposal"

Each project placed on the SFRL will undergo a study to evaluate several alternative solutions to present a preferred operational alternative for approval by Coast Guard Headquarters (G-SEC). The Planning Proposal ("PP") is used to "ensure the thorough evaluation of the project alternatives through the integration of Operational Planning (boats, personnel, etc.), Resource Planning (size, cost, property) and Environment Planning (environmental planning issues)". It also ensures compliance with the National Environmental Policy Act (NEPA). Once the Planning Proposal is approved, the project progresses into the Project Proposal Report phase of development.

4. Project Programming – “Project Proposal Report – Part A”

The Project Proposal Report – Part A (“PPR(A)”) is the architectural programming document which translates the requirements approved in the PP into a facility requirement and definitive project design program. It documents the facility necessary to meet Coast Guard operational or support needs. The approval of this document by Coast Guard Headquarters (G-SEC) establishes the project’s scope and cost.

Since this step formally establishes the funding request for the project to be used in Agency budgeting, it is absolutely critical that the cost estimate completed at this stage accurately represents the estimated cost of construction. To fully identify all project costs, sufficient engineering investigations (geotechnical, survey, hazardous materials, etc.) must be completed and the results incorporated into the PPR(A) documents.

Often A/E’s are retained to complete Concept Design Studies that are used to evaluate alternate engineering solutions to the operational alternative approved in the Planning Proposal. These Concept Design Studies evaluate several design solutions for the project and are defined in Chapter 7 of this Guide.

The PPR(A), when approved, constitutes the design program used to direct the A/E in the design effort. This document, in concert with the contractual Scope of Services and this manual, shall be used by the A/E to develop a fee proposal for the design of the project and form the basis of the design.

5. Schematic Design – “Project Proposal Report – Part B”

The Project Proposal Report Part (B) (“PPR(B)”) is a schematic level design document which translates the architectural program approved in the PPR(A) into a design solution with a budget level construction cost estimate. This document is similar to the PPR(A), the difference being that Part A defines the client’s project requirements, while Part B defines the designers proposed design solution. Like the PPR(A), the PPR(B) is submitted to Coast Guard Headquarters (G-SEC) for approval. Once approved, the PPR(B) finalizes the project scope, sets a final budget for the project and provides clear direction to the A/E for the preparation of construction documents.

The Schematic Design Submittal is defined in Chapter 8 of this manual, and is the basis for a substantial portion of the PPR(B) document including graphics, basis of design/narrative and cost estimate.

6. Design Development and Construction Documents

Once the PPR(B) has been approved, the project will proceed toward “final design”. Most projects will proceed directly to Construction Documents. However, depending on the complexity of the

project, some projects may have an interim "Progress Development Submittal" at the 65% design stage.

Review and approval of both the 65% and final documents will be by the FD&CC. The process for these reviews is defined in Chapter 4 and the submittal requirements are defined in Chapters 9 and 10.

7. Invitation for Bids and Contract Award

Once the final documents and cost estimate have been reviewed and approved by FD&CC, an approval to advertise for bids is requested from Coast Guard Headquarters and a copy of the final estimate and IFB is sent to G-SEC.

After bids are opened, evaluated by the Contracting Officer and the low responsive/responsible bid is found to be within the approved budget, funding will be requested from G-SEC. Once the project has been funded, the Contracting Officer will award the contract.

Note: The process outlined above is for major capital projects executed under the Coast Guard's Acquisition, Construction and Improvement (AC&I) Program. Generally, projects within this program involve large, new facilities or major renovation to existing facilities. Occasionally, A/E design services may be used for execution of projects classified under the Shore Facilities Maintenance Program (AFC-43). AFC-43 projects are generally lower cost projects that maintain or renovate existing facilities. These projects follow a parallel, and somewhat simpler, development and approval process.

Project Identification

Problem
Identification by Unit

Project Initiation

Submit Problem
Statement

Approved?

No

No Action
Required

Project Prioritization

SFRL
Prioritization

**Evaluation of Operational
Alternatives**

Submit Planning
Proposal (PP)

Approved?

No

No Action
Required

**Project Programming
and Concept Design**

Submit Project Proposal
Report Part A
(PPR(A))

Approved?

No

No Action
Required

Schematic Design

Submit Project Proposal
Report Part B
(PPR(B))

Approved?

No

No Action
Required

**Design Development and
Construction Documents**

Final Design

Exhibit 2.1 Coast Guard Planning and Design Process

Chapter 3 RESPONSIBILITIES OF THE A/E

A. General

This Chapter defines the broad responsibilities of the A/E as they pertain to the contract.

B. Responsibilities of the A/E

1. Quality of Work.

a. Quality Assurance Plan.

The A/E shall develop and maintain a Quality Assurance Plan throughout the duration of the project. The plan shall include an explanation of the management approach to execution of the project which addresses coordination between consultants, a plan for quality control, organizational responsibility of team members and individuals with primary project responsibility. This plan is subject to approval by FD&CC and may be corrected to address FD&CC comments.

In addition, this plan shall specifically include:

- The names and license numbers of individuals, by discipline, under whose professional direction the design was completed.
- The names of individuals, by discipline, who will/have completed quality assurance review for the design.
- The names of individuals who will/have completed coordination checks between specifications and drawings.
- The names of individuals who will/have completed coordination checks between design disciplines for both drawings and specifications.

Collectively, these individuals shall be designated the A/E's Quality Assurance Team (QAT) and shall, at each design milestone, certify they have completed their respective quality reviews.

b. FD&CC Review.

The work of the A/E will be reviewed by FD&CC to the extent necessary to assure compliance with life safety, public law, authorized scope limitations, customer requirements, and cost limitations.

FD&CC WILL NOT UNDERTAKE A DETAILED TECHNICAL REVIEW OF THE A/E'S WORK.

It is the responsibility of the A/E, acting in a professional capacity, to ensure accuracy, completeness, and correctness of the design, cost estimates, and all engineering concepts and details of the work, including the coordination of the various architectural, civil, structural,

mechanical, electrical disciplines, and other subdivisions thereof with each other and with the specifications.

THE A/E ASSUMES FULL RESPONSIBILITY FOR THE TECHNICAL ACCURACY AND PROFESSIONAL ADEQUACY OF ALL WORK WHICH HE PRESENTS OVER HIS SIGNATURE. THE A/E SHALL ASSIGN COMPETENT ARCHITECTS AND ENGINEERS, EXPERIENCED IN THEIR RESPECTIVE DISCIPLINES, TO THE VARIOUS PARTS OF THE WORK TO ENSURE ALL ELEMENTS ARE DESIGNED CORRECTLY AND IN ACCORDANCE WITH THE BEST ARCHITECTURAL AND ENGINEERING PRACTICES. ERRORS AND/OR DEFICIENCIES IN THE A/E'S WORK SHALL BE CORRECTED OR REVISED BY THE A/E AT NO ADDITIONAL COST.

All final drawings and specifications intended for construction shall be signed and stamped by a licensed professional architect or engineer, as applicable.

During the bidding and construction phases, the A/E shall prepare amendments to the construction documents (and cost estimates, if required) as necessary to interpret and clarify the documents and to correct errors and omissions. The A/E shall prepare amendments in accordance with Chapter 5 at no additional fee.

2. Scope Limitations.

The A/E shall design the Project in accordance with the Scope Limitations and Project Description in the Statement of Work. The scope of any feature may not be exceeded without written approval of the EIC. Minor deviations in the scope of supporting items may be made to suit field conditions.

3. Changes in Scope.

The A/E shall not deviate from the authorized Scope without written approval of the Contracting Officer.

IN NO CASE SHALL CHANGES IN SCOPE BE MADE AT THE CUSTOMER/UNIT LEVEL. THE A/E'S RESPONSIBILITY IS DIRECTLY TO THE CONTRACTING OFFICER AND ANY REQUESTED DEVIATION FROM THE SCOPE OR ELABORATIONS WITHIN THE SCOPE MUST BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER FOR RESOLUTION.

During the progress of the work, the A/E may expect minor changes in criteria within the general scope of the project and should make necessary adjustments accordingly after they have been approved in writing by both the EIC and KO. Should MAJOR changes in the Scope be authorized, appropriate modification to the A/E contract will be negotiated in accordance with the "Changes - Fixed Price" clause of the contract.

4. Cost Limitations.

In accordance with FAR 52.236-22 the A/E must design to the Estimated Cost of Construction Price (ECCP) set forth in the SOW. During design, the A/E shall continually monitor the construction costs and shall immediately notify the Contracting Officer in writing if it becomes evident that the project will exceed, or is likely to exceed, the ECCP. The A/E is to support such findings with cost information and provide suggestions as to cost reduction measures. If the acceptable low bid for construction exceeds the ECCP FD&CC may require the A/E to redesign the project to bring it within the construction cost limitation, at no additional cost to the Government.

It is also the responsibility of the A/E to design the Project for the lowest life cycle cost, including construction costs and accumulated maintenance and operating costs.

The A/E shall structure the construction contract documents so as to have a base bid which maximizes chances of awarding the construction contract within the funds available, includes all essential features necessary to satisfy the Project requirements and provides a complete and usable facility. Additive bid items shall be included, as appropriate, to provide the complete scope of the Project. See Chapter 5 for additional information on the bid structure and the use of additive bid items.

When bids or proposals for the construction contract are received that exceed the ECCP the A/E shall perform such redesign and other services as necessary to permit contract award within the funding limitation *at no additional cost to the Government*.

5. Conformance to Criteria and Submission Standards.

All work shall be in accordance with this Publication and other criteria, instructions, technical guides, and guide specifications, as listed in the SOW. Deviations constitute a contract change and may only be authorized by the Contracting Officer.

6. A/E Project Manager.

One individual of the A/E Firm shall be designated as Project Manager. The Project Manager shall be fully cognizant of the requirements of the A/E Contract, performance schedule and contents of this publication. The Project Manager will work directly with the assigned EIC, who will furnish any design guidance necessary for the successful execution of the work.

7. Poor Performance/Resubmittal Policy.

If the KO determines that a design submittal is unacceptable, thus necessitating a resubmittal, the A/E may be required to send representatives to FD&CC, at no additional cost to the Government, to resolve the problems with the design and prepare the resubmittal.

8. Error and Negligent Performance.

Neither FD&CC's review, approval or acceptance of, nor payment for, the services required, nor any action arising out of the performance of the design contract, shall be construed to operate as a waiver of any rights under the design contract. The A/E shall be liable to the Government for any and all damages caused by the A/E's negligent performance of any of the services furnished.

Per F.A.R. Clause 36.608, Design errors or omissions, which result in damages or extra cost to the Government, will be evaluated for potential A/E financial liability. If the Government determines that the A/E is financially liable for a design deficiency, the A/E will be so advised by official correspondence. FD&CC will actively pursue reimbursement of costs incurred by the Government as a result of the A/E's errors and/or negligent performance. The preferred method of settlement of A/E financial liability is for the A/E to accept responsibility and negotiate directly with the Contractor. Where the A/E cannot reach an agreement with the Contractor or if the A/E declines to negotiate or accept responsibility, FD&CC will arrange settlement directly with the Contractor and will bill the A/E appropriately.

D. Document Ownership

Under the clause "Drawings and Other Data to Become Property of Government" of the Contract Clauses, the ownership of all designs, drawings, specifications, notes, calculations, and other work is vested in the Government.

E. Performance Evaluations

FD&CC will prepare A/E performance evaluations for all Design and Engineering Service Contracts. A/E performance will be rated as either excellent, average, or poor taking into consideration such things as technical quality, coordination of design documents, cost effectiveness, maintaining project schedules, cooperation, etc. Incomplete submissions, late submissions or resubmissions will have significant adverse impact on an A/E's performance evaluation.

1. Design Phase Evaluation.

Immediately upon completion of final design, or engineering services, the EIC will evaluate the A/E performance on the services rendered. Standard Form 1421, "Performance Evaluation (Architect-Engineer)", is used for this purpose (See copy at the end of this chapter). A copy is maintained at FD&CC and with the agency database for a period of six years. The A/E will be notified in writing if a "Poor" rating is proposed, or if the A/E is not recommended for future contracts, and will be allowed an opportunity to meet with appropriate personnel at FD&CC to discuss the rating and possible corrective actions. The A/E's response will be taken into consideration when finalizing the evaluation. If the final evaluation is still "Poor", it will be attached to the final evaluation form. The A/E will also be notified in writing if an "Excellent" rating is earned.

2. Interim Performance Evaluations.

Interim performance evaluations may be prepared and used to advise A/E's of their performance during the execution of a contract, as considered appropriate by the Contracting Officer.

3. Post Construction Evaluations.

Within 90 days after beneficial occupancy of the facilities constructed, the PM will submit an evaluation of the performance and effectiveness of the A/E prepared contract documents. This evaluation, also on Standard Form DD 1421, is maintained in the A/E Contract and Qualification Data File and Agency database.

4. Affect on Future Selection.

Performance evaluations are available to future selection boards and will be considered when subsequent A/E selections are made. Furthermore, copies of evaluations are available for the use of other Federal design and construction agencies in selecting A/Es for their design contracts.

F. Release of Information

1. Clearance.

Before any information concerning a project under design or construction is released for publication or public speeches, the A/E shall contact the contracting office to obtain a clearance and release.

2. Interpretation of Drawings and Specifications.

At no time will the A/E render an interpretation of the drawings and specifications without following contract procedures.

For information regarding procedures during the bid period see Chapter 5.

For information regarding procedures after contract award see Chapter 11.

3. Military Security Requirements.

All classified projects are to be accomplished in accordance with appropriate clauses of the FAR, which will be added to the contract when applicable, and other supplemental security requirements as imposed by the Unit.

4. Public Information Act:

The Public Information Act, 5 USC 522, as amended, requires the release of records held by Government Agencies or Offices when requested by interested parties, unless such records are

covered by one of the "exemptions" listed in the law. The FAR provides guidance on handling requests for records and exemptions under this Act.

The A/E is advised that the Public Information Act applies to the data provided during negotiations. Therefore, in the event an A/E wishes their cost and pricing data to be privileged and exempt from public release, FD&CC should be advised in writing and each page containing such data should be appropriately marked.

However, F.A.R. 24.202(a) provides that the Government shall not make a proposal to any person unless the proposal is set forth or incorporated by reference in the resulting contract.

PERFORMANCE EVALUATION (ARCHITECT - ENGINEER)

1. PROJECT NUMBER

2. CONTRACT NUMBER

IMPORTANT: Be sure to complete performance section on page 2. If additional space is necessary for any item, use remarks section on page 2.

3. TYPE OF REPORT (Check one)

☐ INTERIM ☐ COMPLETION OF DESIGN OR STUDY ☐ COMPLETION OF CONSTRUCTION ☐ TERMINATION

4. REPORT NUMBER

5. DATE OF REPORT

6. NAME AND ADDRESS OF CONTRACTOR

7. PROJECT DESCRIPTION AND LOCATION

8. OFFICE RESPONSIBLE FOR:

A. SELECTION OF CONTRACTOR

B. NEGOTIATION/AWARD OF CONTRACT

C. ADMINISTRATION OF CONTRACT

9. CONTRACT DATA

A. TYPE OF WORK

B. TYPE OF CONTRACT

☐ FIXED-PRICE

☐ OTHER (Specify)

☐ COST-REIMBURSEMENT

C. PROJECT COMPLEXITY

☐ DIFFICULT ☐ ROUTINE

☐ SIMPLE

D. PROFESSIONAL SERVICES CONTRACT

INITIAL FEE

AMENDMENTS

CLAIMS BY CONTRACTOR

TOTAL FEE

NO.

AMOUNT

NO.

AMOUNT

\$

\$

\$

\$

E. DATE CONTRACT AWARDED

F. CONTRACT COMPLETION DATE (Including extensions)

G. ACTUAL COMPLETION DATE OF CONTRACT

10. KEY CONSULTANT DATA

A. NAMES

B. ADDRESS

C. SPECIALTY

11. CONSTRUCTION COSTS

A. INITIAL ESTIMATE

B. AWARD

C. ACTUAL

\$

\$

\$

12. CONSTRUCTION CHANGES AND DEFICIENCIES

NUMBER

TOTAL

A. CONSTRUCTION CHANGES

\$

B. CONSTRUCTION CHANGES RESULTING FROM DEFICIENCIES IN A-E PERFORMANCE

\$

C. DEFICIENCIES PAID FOR BY A-E

\$

D. DEFICIENCIES PAID FOR BY GOVERNMENT

\$

13. OVERALL RATING

☐ EXCELLENT

☐ AVERAGE

☐ POOR

14. RECOMMENDED FOR FUTURE CONTRACTS?

☐ YES

☐ NO (If "NO", explain in remarks on Page 2)

15A. NAME AND TITLE OF RATING OFFICIAL

16A. NAME AND TITLE OF REVIEWING OFFICIAL

15B. SIGNATURE

15C. DATE

16B. SIGNATURE

16C. DATE

SN 7540-01-155-3244

1421-101

STANDARD FORM 1421 (10-83)
Prescribed by GSA
FAR (45 CFR) 53.236-2(d)

PERFORMANCE

| STAGES OF SERVICES (As applicable) | | | | NOT APPLICABLE | RATING FACTORS/RATINGS | | | | | | | | RATED BY | | |
|---------------------------------------|-----------------------------|------|----|----------------|------------------------|--------------|-------------|--------------|------------|------------------|-------------------|--------------|-------------|---|--------------------|
| | | | | | ACCURACY | COMPLETENESS | COOPERATION | COORDINATION | MANAGEMENT | MEETING SCHEDULE | PERSONNEL ABILITY | WORK QUALITY | CODE LEGEND | | |
| CONCEPTS | SCHEDULE (Mo., day, yr.) | FROM | TO | ARCH. | | | | | | | | | | + EXCELLENT A AVERAGE P POOR N/A NOT APPLICABLE NI NO INFORMATION | SIGNATURE AND DATE |
| | | | | STRUC. | | | | | | | | | | | |
| | ACTUAL (Mo., day, yr.) | FROM | TO | MECH. | | | | | | | | | | | |
| | | | | ELEC. | | | | | | | | | | | |
| TENTATIVES | SCHEDULE (Mo., day, yr.) | FROM | TO | ARCH. | | | | | | | | | | | |
| | | | | STRUC. | | | | | | | | | | | |
| | ACTUAL (Mo., day, yr.) | FROM | TO | MECH. | | | | | | | | | | | |
| | | | | ELEC. | | | | | | | | | | | |
| WORKING DRAWINGS | SCHEDULE (Mo., day, yr.) | FROM | TO | ARCH. | | | | | | | | | | | |
| | | | | STRUC. | | | | | | | | | | | |
| | ACTUAL (Mo., day, yr.) | FROM | TO | MECH. | | | | | | | | | | | |
| | | | | ELEC. | | | | | | | | | | | |
| ESTIMATES | | | | A/S | | | | | | | | | | | |
| | | | | M/E | | | | | | | | | | | |
| CRITICAL PATH METHOD | | | | PRE-AWARD | | | | | | | | | | | |
| | | | | POST AWARD | | | | | | | | | | | |
| POST CONSTRUCTION CONTRACT SERVICES | | | | SHOP DWGS. | | | | | | | | | | | |
| | | | | MANUALS | | | | | | | | | | | |
| INSPECTION | | | | FIELD | | | | | | | | | | | |
| | | | | OFFICE | | | | | | | | | | | |
| SOLICITATION DOCUMENTS | | | | | | | | | | | | | | | |

MARKS

Chapter 4 CONTRACT ADMINISTRATION AND FEE STRUCTURE

A. General

This Chapter outlines the requirements for the fee proposal, negotiations and award of the A/E contract.

B. Pre-Award Activities

1. A/E Selection.

Complete information concerning FD&CC policies and procedures for consideration and selection is available from the Commanding Officer, USCG Facilities Design and Construction Center Pacific, 915 Second Avenue Room 2664, Seattle, WA 98199.

2. Request for Fee Proposal.

The A/E selected for the project will be notified in writing by the KO and requested to submit a fee proposal for the project. The A/E will be furnished the proposed A/E contract, this guide, and a copy of the Appendix A, Statement of Work. The A/E may, at their expense, visit the site prior to preparation of a proposal. The A/E or the FD&CC may request a pre-negotiation conference at the FD&CC office to discuss any unusual or significant aspects of the project.

3. Statement of Work (SOW).

The Statement of Work (Appendix "A" of the contract) sets forth the project specific design requirements, the services to be provided (project planning/feasibility reports, preliminary plans, construction documents, construction support services, the schedule for submittals) and any special considerations required. The SOW will be the basis for negotiating the fee for the project and, along with any agreed upon modifications made during negotiations, shall become a part of the contract.

4. Pre-Negotiation Conference.

For certain projects, pre-negotiation visits to the site may be necessary for reviewing and clarifying the proposed items of A/E Services and to become more familiar with site conditions. The pre-negotiation conference will normally be attended by the EIC, Contracting Officer, and representatives of the Benefiting Unit. This conference is not mandatory and FD&CC will not be responsible for A/E costs incurred by this visit.

C. Fee Proposal

1. Format of the Proposal.

The fee proposal shall be based on man-hour requirements and shall be prepared using the Fee Proposal forms contained in Appendix F. An Excel version of this form is available from the EIC.

2. Services Defined.

The A/E contract is divided into three basic types of services: Design, Engineering and Construction Support.

- a. Design Services are defined as those efforts related and integral to the production and delivery of plans, designs, drawings, specifications and cost estimates. They include:
 - Schematic Design (0-35%)
 - Progress Submission (35%-65%)
 - Final Design (35-100%)
 - Specifications
- b. Engineering Services are generally those efforts necessary to develop physical data required for the preparation of the design and include but are not limited to:
 - Pre-design Conference
 - Review Conferences
 - Site surveys including topographic, boundary, utility and hydrographic
 - Geotechnical investigations
 - Concept Design Studies
 - Engineering Studies
 - Site investigations to determine the existing conditions of architectural, structural, electrical, mechanical, and utilities systems
 - Interior design/furnishings
 - Master planning
 - Cost estimating
 - Hazardous Material Surveys
- c. Construction support services are those services that support the construction effort. They are divided into two classifications: Construction Contract Support Services (CCSS) and Field Support Services (FSS):

Construction Contract Support Services (CCSS) include:

- Submittal review
- Office consultation during construction

- Preparation of Operations and Maintenance Manuals
- Preparation of As-Built documents.

Field Support Services (FSS) include:

- Attending pre-construction conferences
- Periodic site inspections
- Participation in the Final Inspection and preparation of punch-lists
- Value engineering proposal review
- Field consultation.

3. Design Phases.

USCG projects evolve from the planning documents, progress through the final design to the construction contract award. The drawings, design analysis, specifications, and estimates for each phase shall be prepared in accordance with instructions contained within this Guide and the A/E contract. These requirements may be modified by negotiation for projects of an unusual nature or scope if the Contracting Officer determines the usual format is not appropriate.

a. Phase I - Contract Base Bid.

CONCEPT STUDIES

Concept studies are considered an Engineering Service and are not part of all A/E contracts (The SOW will provide specific requirements when concept studies are included in the contract). This effort requires the study of 2-3 alternative functional plans for the purpose of evolving a single plan that provides the best functionally responsive facility for the user and represents approximately 10% of the finished design.

See Chapter 8 for additional information on Concept Design Studies.

SCHEMATIC DESIGN

The Schematic Design phase is limited to not more than 35 percent of the total design and is based on the approved concept study. Schematic design shall include the requirements for each technical section. This includes drawings, outline specifications, data, and sufficient documentation so FD&CC and the Benefiting Unit can determine if the design is responsive to the Unit's functional requirements and provide a firm basis to allow a dependable cost estimate to be prepared on which the final design can be initiated.

See Chapter 9 for additional information on the Schematic Design Submission.

b. Phase II – Contract Option I

FINAL DESIGN

The final design phase is the completion of construction documents and other deliverables as required by contract.

FD&CC may not exercise the Option for Final Design. If this should occur, all drawings, data, reports and other material related to the project shall be turned over and become property of FD&CC.

See Chapters 10 and 11 for additional information on the Final Design.

c. Phase III – Contract Option II

CONSTRUCTION SUPPORT PHASE SUPPORT

The construction support phase contains services provided by the A/E in support of the construction effort (submittal review, site visits, etc).

FD&CC may not exercise this option.

See Chapter 12 for additional information on the Construction Phase Services.

4. Fee Limitations.

Services defined as *Design Services* may not exceed the 6% statutory limitations imposed by FAR 15.90.3(d)(1)(ii) for design services. The limitation does not apply to cost of investigative and other services identified as Engineering Services in the SOW.

5. A/E and Consultant Rates.

All labor rates may be subjected to a DCAA audit. When subcontractors are employed for the project, the audit procedure may apply to them as well. Overhead rates proposed should be a weighted rate based on work performed by the various contractors. The labor rates shown for professionals and sub-professionals should also be a weighted average of the rates for the actual individuals assigned to the project. Work sheets shall be submitted with the proposal, showing how these weighted rates were derived.

D. Schedule/Quality Assurance Plan

Concurrent with the fee proposal, the A/E shall submit a schedule for accomplishing the design within the stated time restrictions in the SOW. The schedule may be either in the form of a bar chart or

network analysis showing sequence of completion. Project schedule shall include all review and approval periods required by the government and identified in the SOW.

Accompanying the project schedule will be an explanation of the management approach to execution of the project addressing coordination between consultants, plan for quality control, organizational responsibility of team members and individuals with primary project responsibility. This plan is subject to approval by the KO and shall be corrected to address any comments by the KO. During the period of the contract, the A/E is required to submit in writing to the KO, for approval, proposed changes in the schedule and/or the quality assurance plan.

E. Negotiations

Negotiations will normally be held in the FD&CC office. The objective is to assure a mutual understanding of the SOW and to reach an agreement on a fair and reasonable fee. The A/E is strongly encouraged to notify the KO, and obtain written approval to any proposed changes in the SOW, prior to the start of negotiations. During negotiations, the SOW will be thoroughly reviewed and the A/E's proposal will be examined and discussed in detail.

F. Notice to Proceed

Upon successful completion of the contract negotiation, the KO will notify the A/E. (Should negotiations fail, FD&CC will invite a proposal from the next A/E firm selected from the interviews.) If agreement is reached, the contract will be forwarded to the A/E for signature approximately 15 days after completion of negotiations. The award of contract will constitute the A/E's Notice to Proceed with the work.

G. INITIATION OF WORK

The A-E shall not proceed or initiate any work or any successive design level of the work required under this contract prior to receipt of approval by the Contracting Officer of the preceding design level. Unauthorized work shall be at the complete risk of the A-E.

C. PAYMENTS

1. General.

Shortly after award of the contract, the Contracting Officer will forward a payment information package to the A/E. This package contains guidance and forms for preparing and submitting payments in accordance with the Contract Clause entitled "Payments Under Fixed-Price Architect-Engineer Contracts". Monthly payments may be made as the work progresses subject to submission by the A/E of estimates of the value of completed services and determination by the EIC that the A/E's performance is satisfactory. The extent of supporting data required from the A/E will vary depending upon the amount of the invoice and past A/E performance but shall as a minimum contain discrete line items for phases and options of work, values for each from the fee proposal, percentage of work complete and value of work complete.

2. Progress Payments

Payment requests may be submitted at the completion of each of the scheduled submitted stages, or on a monthly basis. The selected invoicing interval is to be agreed to at the completion of negotiations. Submit on Form KO-2b, *Request for Progress Payment (A/E)*. See Exhibit 3.1.

3. Reimbursables

When claims are submitted for reimbursable costs allowed under the contract, receipts and other supporting data relative to the claim must be included with the payment request. If additional travel has been authorized by the KO a completed A/E Travel Claim Voucher is to be submitted.

4. Retention

10% retention may be applied to the partial payment requests for Schematic Design (Design Development) and Final Design services. Retention will not be applied to CCSS or FSS options. In accordance with contract clause 52.232-10, "*Payments Under Fixed Price Architect Engineer Contracts*," and as approved by the Contracting Officer, retainage will not be carried over to subsequent options.

5. Final Payments

Submit an executed Contractor's Release Form. Prior to final invoicing, the amount of completed performance should be confirmed with the EIC.

6. Non Acceptance

Improperly prepared requests that do not meet the requirements of this A/E Guide will be returned to you within 15 days of receipt, stamped NOT ACCEPTED. When you re-submit a properly prepared payment request, the date on it must be the date re-submitted and not the original date of the NOT ACCEPTED payment request. The payment request number will remain the same.

D. Correspondence

Correspondence with FD&CC shall be addressed to:

Commanding Officer
Attn: (Name of Contracting Officer)
USCG Facilities Design and Construction Center Pacific
915 Second Avenue, Room 2664
Seattle, WA 98174-1011

All correspondence relating to the A/E Contract shall reference the contract number. After award of a construction contract, all correspondence relating to the construction contract documents (drawings and specifications) shall reference the A/E Contract Number, the project title and location, and the construction contract number. When bulky submittal items are forwarded under separate cover, a copy of the forwarding letter and other related correspondence shall be included with the package forwarded under separate cover.

E. TRAVEL REGULATIONS

If the A/E and/or his representative(s) are directed by the Contracting Officer to travel to locations not specifically covered in the contract, the Government will reimburse the A/E for transportation and allow for such travel at a cost not to exceed the then current daily rates for Government employees, including per diem, mileage, etc., in lieu of all other expenses. Transportation cost by air will be calculated at the lowest coach rate for corporate air tickets. Transportation by automobile on such required travel shall be reimbursed and travel time and mileage will be determined in accordance with Joint Travel Regulations. All such travel shall be approved in writing by the Contracting Officer.

REQUEST FOR PROGRESS PAYMENT (A/E)

FROM:

Contractor's Name

Address

City State Zip

Contract Number:

Payment Request No.

Date:

Contract Title:

Prompt Payment Discount:

The undersigned Contractor certifies that the work covered by this Request for Payment has been completed in accordance with the Contract Documents, and that the current payment shown is now due.

| | | |
|--------------------------------|----|---|
| Original Contract Amount: | \$ | - |
| Net Changes thru Mod No. ____ | \$ | - |
| SUBTOTAL | \$ | - |
| Value of Completed Performance | \$ | - |
| Less Total of Prior Payments | \$ | - |
| Amount of this Payment Request | \$ | - |

Contractor's Signature/Title

Date

To be completed by the FDCC PAC Engineer-In-Charge:

In accordance with the Contract and this Request, the Contractor is entitled to payment in the amount shown below.

| | | |
|------------------------------------|-----------|----------|
| Amt of Work Performed to Date: | \$ | - |
| Less Previous Payments: | \$ | - |
| SUBTOTAL | \$ | - |
| Less Previous Retention: | \$ | - |
| SUBTOTAL | \$ | - |
| Less Retention This Payment: | \$ | - |
| Recommended Payment Amount: | \$ | - |

[] Partial [] Final Payment

DAFIS Number

DAFIS Number

DAFIS Number

Engineer-In-Charge

Date

KO 2B

Chapter 5 DESIGN SUBMITTALS, REVIEWS AND CONFERENCES

A. General

The submittal of the design to FD&CC and subsequent reviews is the primary means to ensure that the completed project will meet the needs of the user, the project criteria is being followed, and the project remains within budget limitations.

This chapter defines the general design submittal process and outlines procedures that will be used to review the design at various stages of development. Flow charts of the Design Development Process (Phase I; Notice to Proceed through Approved Schematic) and Final Design Process (Phase II; Final Design Notice to Proceed through Final Construction Documents) are found at the end of this chapter. (See Exhibits 5.1 and 5.2).

Specific criteria for the actual submissions are contained in Chapters 8 through 12.

B. Review Procedures

The documents are to be submitted to FD&CC in accordance with the schedule provided in the SOW.

FD&CC will review the submittal and record comments on the Review Comment Sheet (Exhibit 5.3). Each comment will be discussed with the Designer during the review conferences and the follow-up action noted. When a correction is to be made, the A/E will indicate the nature and location of the correction in the Design Office columns on the review form. The description shall be detailed enough for the reviewee to verify compliance without extensive search. If for any reason, the A/E does not comply with the agreed upon action, a full explanation of the reason for non-compliance shall be provided to the EIC. If FD&CC does not deem the reason for non-compliance acceptable, the A/E may be directed to incorporate the comment into the design.

The requirements for each submittal are identified in the following chapters. In the event a submittal is forwarded for FD&CC review which fails to include the required information, the package will promptly be returned to the A/E for completion. The A/E shall incorporate the missing information and resubmit to FD&CC with a statement from the A/E Project Manager as to the information added. The fact a resubmittal was necessary will not necessarily extend the schedule.

C. Design Submittals and Review Conferences

1. Concept Design Studies.

Copies of the Concept Design Study shall be submitted in accordance with the schedule indicated in the Statement of Work. After the review period the A/E shall attend a review conference, present the Study and respond to questions and comments from the review team and/or User. Subject to the requirements of the SOW, the A/E and EIC will confer with the User to evaluate the

alternative designs and further develop a final design which best serves the functional needs of the User. The approved final design concept becomes the basis for the Schematic Design.

2. Schematic Design.

Copies of the Schematic Design shall be submitted in accordance with the schedule indicated in the Statement of Work.

After the review period the A/E shall attend a review conference called the "Design Quality Review" (DQR), present the design and respond to questions and comments from the review team. The DQR Conference will normally be held at FD&CC offices in Seattle. At the conclusion of the DQR, the EIC shall direct the A/E to incorporate the changes into the design package. The revised schematic submittal will be returned to FD&CC.

a. Corrected Schematic Submittal.

An additional Corrected Schematic Submittal shall be forwarded to FD&CC consisting only of the civil site plans, utility plans, the architectural floor plans, roof plans, building elevations, outline specifications, color boards and the corrected Basis for Design narrative. These documents will be forwarded to the Customer for review.

b. Customer Design Review Conference.

The "Customer Design Review Conference" (CDR) is held on site with members of the Benefiting Unit to present the design. The purpose of the CDR is to ensure the customer fully understands the design and agrees that the proposed facilities will meet their functional requirements. *The CDR is the last opportunity for the customer to provide cost effective input into the design.*

c. Approved Schematic Submittal.

Comments generated at the Customer Design Review Conference shall be incorporated into a revised schematic package by the A/E called the "Approved Schematic Submittal". When this has been accomplished, the Approved Schematic Submittal is returned to FD&CC for submittal to Coast Guard Headquarters for approval. The Approved Schematic is to be clearly presented with the level and detail of information which will establish the technical direction of the project and assure that the construction can be accomplished within the approved scope of design, gross square footage and construction budget. The design of the facility is not to exceed the Gross Square Feet approved for design.

With the submission of the Approved Schematic Design package, the A/E warrants the full design scope can be built within the identified construction budget.

3. Progress Development Submittal.

Copies of the Progress Development Design shall be submitted in accordance with the schedule indicated in the Statement of Work. Review procedures shall be as defined in the SOW and may vary from an informal "over the shoulder" review at the A/E's office to a more formal review conference at FD&CC or the site.

4. Final Design Submittals.

a. 100% Submittal (First).

The 100% Submittal (First) represents complete documents, ready for construction, which have been reviewed by the A/E Quality Assurance Team (QAT) and submitted with a letter stipulating the documents have been reviewed and found to be complete, and free of conflicts, errors and omissions.

Copies of the 100% Submittal shall be submitted in accordance with the schedule indicated in the Statement of Work

b. Final Design Review Conference.

After the review period the A/E shall attend a review conference called the "Final Design Review" to discuss comments with the review team. At the conclusion of the Final Design Review Conference, the A/E will correct the documents and resubmit them to FD&CC.

c. 100% Submittal (Final).

The corrected design (called the 100% Submittal (Final)) will be back-checked by the FD&CC review team to ensure comments from the Final Design Review have been addressed.

d. Final Documents.

Once FD&CC has completed back checking the 100% Submittal (Final), the A/E will print the final documents, stamp them with the appropriate professional seal, and forward them to FD&CC for signature.

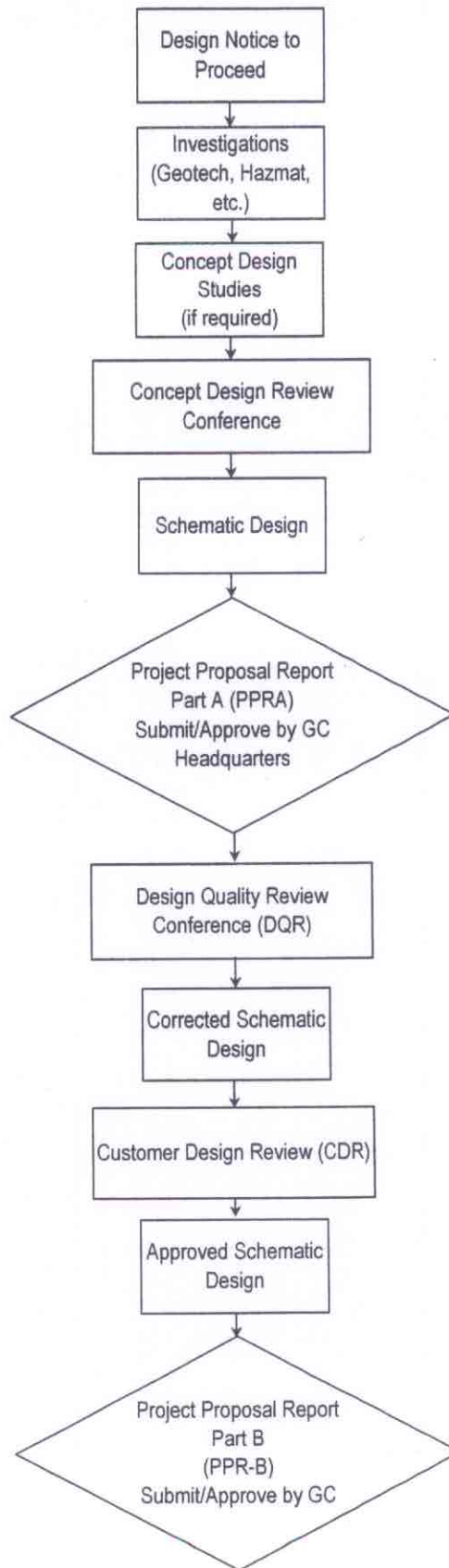


Exhibit 4.1 Design Development Process

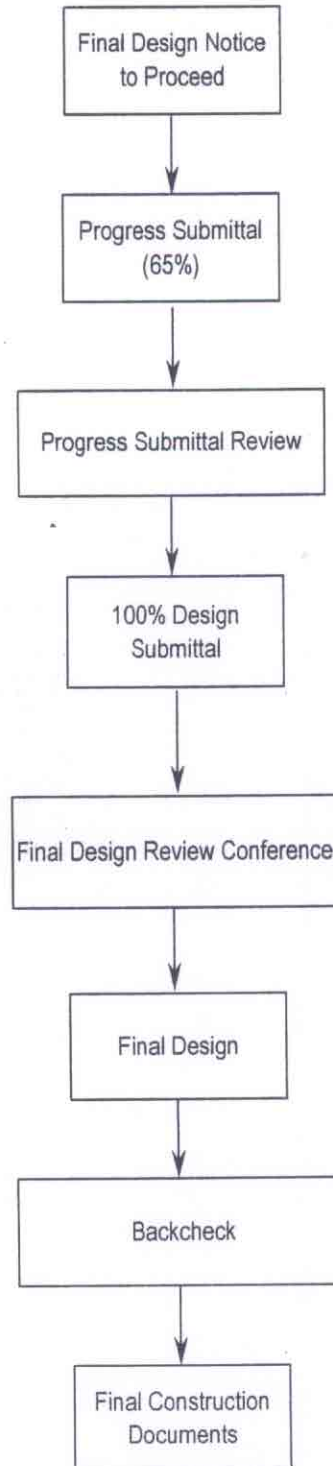


Exhibit 4.2 Final Design Process

REVIEW COMMENTS

PROJECT: [Project Name:]
 LOCATION: [Project Location:]

December 3, 2001

| FD&CC Pacific | | DESIGN PHASE: [Design Document:] | DISCIPLINE: [Reviewer Discipline:] | REVIEW ACTION: A - Accepted W - Withdrawn C&R - Check and Resolve I - Information | DESIGN ACTION: C - Correction made (if not, explain why) | Back Check by: (Init.) |
|---------------|---------------------|-------------------------------------|---------------------------------------|---|--|---------------------------|
| ITEM NO. | DWG / SPEC. SECTION | COMMENTS | | REVIEW ACTION | DESIGN ACTION | BACK CHECK |
| 1 | | | | | | |
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| 14 | | | | | | |

Chapter 6 GENERAL REQUIREMENTS

A. General

This chapter defines the general requirements applicable to all A/E contracts.

These include:

- Communications with the Benefiting Unit
- Meeting Minutes and documentation
- Coordination of the design with the contract solicitation
- Bid phase responsibilities
- Permitting and Environmental Documentation
- Utility Coordination

B. Communications with the Benefiting Unit

The EIC is the focal point between all Coast Guard representatives and the A/E regarding technical and performance issues. However, the A/E may be required to consult with the unit or local engineering support unit in matters concerning local conditions or operational requirements. Such communications shall be appropriately documented with a copy forwarded to the EIC. Technical and design considerations which conflict with the directions from the EIC shall be brought to the EIC's attention immediately.

C. Meeting Minutes

The A/E shall prepare minutes of all project-related meetings, conferences and telephone conferences and distribute copies to all parties. One copy each shall be sent to the Contracting Officer and EIC regardless of attendance at the meeting.

D. Bid Structure and Bid Phase Responsibilities

1. Review of Solicitation and Bid Structure.

The A/E should review the solicitation and provide input to the EIC on such matters as contract length, project phasing, bid structure and, if used, liquidated damages.

Table 6.1 contains minimum areas for review of the contract solicitation.

Table 6.1 Suggested Practices for Review of Contract Solicitation

| Issue: | Suggested Practice: |
|---|--|
| Contract Length | Review to ensure the period for execution of the work is reasonable. Factors to consider: <ul style="list-style-type: none"> • Preconstruction Period • Seasonal factors • Available labor pool • Complexity of work • Availability of specialty items • Lead time materials • Environmental/permitting constraints • Operational Requirements |
| Project Phasing | If the work is to be phased, the exact phasing should be clearly delineated in Division One. If the phasing is to be linked to contract milestones, the periods, measured in days from Contract Award, should be contained in the Solicitation. |
| Bid Structure: Unit Price Items | Cost items, particularly those that are price sensitive or that the exact quantity cannot be readily determined should be bid on a unit price basis (based on an estimated quantity). Standard contract clauses give both parties the right to re-negotiate the unit cost if the actual required quantity differs by more than 15% (either greater or less) from the contract estimated quantity. |
| Bid Structure: Independent Portions of Work | If the project contains portions of work from different funding categories, these must be reflected in the bid structure as separate bid items. The EIC will provide assistance should this be necessary. |
| Options | Options describe a Statement of Work to which the bidder will submit a separate price. The option will contain a specific period of time in which the KO may execute the option. |
| Additives | Additives describe a Statement of Work to which the bidder will submit a separate price. Additives are exercised at time of Contract Award and are generally used to permit additional work to be awarded should the bids fall at or below the budget. Additives must not be used for necessary elements required for full and functional use. |
| Basis of Award | The use of Options and/or Additives should be reviewed carefully to determine the basis for contract award. Improperly structured Additives and/or Options could cause ambiguous bid results and trigger a bid protest. |
| Liquidated Damages | Liquidated damages are not normally used on routine projects. If the completion date of the project will dramatically and adversely affect the Government, the KO may elect to incorporate liquidated damages. However, liquidated damages cannot be punitive. They can only reflect an approximation of the actual damages suffered by the Coast Guard due to late delivery of the construction project. |

2. Pre-Bid Conference.

Depending on the procurement strategy for the project, the Contracting Officer may wish to hold a pre-bid conference. The purpose of this meeting is to familiarize prospective bidders with the project. It generally will consist of two parts: an overview of the solicitation (conducted by the Contracting Officer) and an overview of the project and site visit (conducted by the PM). Questions by prospective bidders should be carefully documented. If invited to attend, the A/E may assist the PM in the overview of the project.

3. Bidders Questions.

During the bidding period, all requests made to the A/E by prospective bidders for clarification or interpretation of drawings and specifications shall be referred to the Contracting Division, FD&CC. A telephone number will be listed in the "Bidding" section of the specifications. If FD&CC cannot satisfy the inquiry, the matter will be referred to the A/E by the EIC for clarification and preparation of an Amendment if necessary. UNDER NO CIRCUMSTANCES SHALL THE A/E HAVE DIRECT CONTACT WITH ANY BIDDERS.

4. Contract Amendments.

When it is necessary to provide bidders a correction to the solicitation, the Contracting Officer will issue an amendment. The amendment is a binding change to the contract issued before it is awarded. The A/E may be requested to assist in the drafting of amendments. Specific format and requirements for amendments shall be determined by the KO and EIC, however a sample amendment is as shown in Exhibit 5.1 at the end of this chapter.

5. Conforming Documents.

Prior to contract award, the A/E shall post all amendments to the contract in the plans and specifications. This will ensure that the documents he or she references during construction accurately reflect all changes to date.

E. Permitting

The majority of projects covered by this guide will take place on Federal Property managed by the Coast Guard. As such, the Coast Guard acts as the "authority having jurisdiction" with regard to municipal/city building or zoning permits – and generally no such permits are required. However, since the Coast Guard is subject to the National Environmental Policy Act (NEPA), projects may require significant environmental review and approval at the Local, State and Federal level. When required by the SOW, the A/E shall complete a review of required permits and/or assist in the preparation, submittal and approval of permit applications.

F. Contact with Public Utilities

The A/E shall contact appropriate utility company representatives, as necessary, to determine the nearest location and characteristics of service facilities capable of supplying requirements. Such contacts should be made on an information basis only. Caution should be exercised to avoid any implied commitment on the part of the Coast Guard for any planned requirements. Also, feasibility studies conducted should be based on cost-of-service information provided by FD&CC in lieu of the published or quoted rates of the supplier. The cost of utility service for use in feasibility studies and information concerning selection of fuel will be furnished by the EIC upon request.

Exhibit 6.1 Sample Amendment

AMENDMENT 1

CONSTRUCTION SPECIFICATIONS

1. Section 01500 – Construction Facilities and Temporary Controls

Add the following as the end of Paragraph 2.9.2:

“Restore the laydown area to the same condition as prior to construction including vegetation and irrigation of the lawn.”

2. Section 02220 – Demolition

Add the following as the end of Paragraph 1.3:

“A separate detailed demolition plan for the existing bridge shall be submitted. The demolition plan shall conform to requirements of Section 15-4, “Bridge Removal” of Caltrans Standard Specifications and shall be signed by a California Registered Engineer.

CONSTRUCTION DRAWINGS

1. Drawing G2 – General Notes, Abbreviations, Legend & Symbols

In GENERAL NOTES, revise Note 3.A IN ITS ENTIRETY to read as follows:

“3.A. REFER TO SHEETS S2, S23 AND S24 FOR CONCRETE AND REINFORCEMENT STEEL REQUIREMENTS”.

2. Drawing G4 – Construction Phasing Plan, Sheet 1

ADD NOTE to read as follows:

“PROVIDE MONITORING POINTS ON THE EXISTING BRIDGE FOR BOTH HORIZONTAL AND VERTICAL MOVEMENT OBSERVED DURING PILE DRIVING. REPORT OBSERVED MOVEMENTS TO THE COR”.

3. Drawing S20 – Typical Section

On the Typical Section add “AND VARIES” below the 815 dimension.

SECTION TWO – ENGINEERING AND DESIGN SERVICES**Chapter 7 INVESTIGATIONS AND ENGINEERING STUDIES****A. General**

This chapter defines the procedures, standards and submission criteria for Site Investigations required by the Statement of Work in support of the project design. It also outlines general procedures for other specific investigations, engineering studies and engineering services that may also be required in the Statement of Work.

These include for all contracts:

- Site Investigation

And, if specifically required in the SOW, the following investigations or surveys:

- Geotechnical
- Surveying and mapping
- Hydrographic surveys
- Hazardous Materials Surveys

And/or studies:

- Seismic Analysis and FEMA Studies
- Energy Analysis
- Wave Studies
- Master Planning
- Homeporting Studies

And/or miscellaneous engineering services:

- Permit Support
- Detailed furniture design and procurement services
- Value Engineering Services
- Models and Renderings

B. Site Visit Procedures and Protocol

All site visits shall be coordinated with EIC and Benefiting Unit personnel. During the execution of site investigation work, the A/E shall be responsible for obtaining necessary permits and complying with all applicable laws, codes and regulations, including OSHA regulations. The A/E shall be responsible for all damages to persons or property which occur as a result of the A/E's fault or

negligence. The A/E shall take proper safety precautions to protect the public, the property of the public and the Government from physical hazards and unsafe conditions. Upon completion of the site investigation, the A/E shall return the property to its original conditions except as released in writing by the KO.

C. Site Investigations (All Contracts)

1. General.

The A/E shall obtain site data and investigate existing site conditions, utilities and facilities, as necessary, to properly integrate design of the Project with existing site conditions. Except as otherwise contracted, site investigation shall include complete and accurate field investigation, topographic survey and verification of location and availability of utility and drainage systems. Existing as-built record drawings, when available, will be furnished by the Coast Guard for information; however, the A/E shall be responsible for field verifying as-built drawings and other site features which may influence the design of the Project.

The A/E shall photograph and study the surrounding built and un-built environment for purposes of providing compatible design. The A/E shall submit with the first design submittal a photographic record of existing site conditions and prominent facilities adjacent to the project site that will influence the architectural design of the project.

In the event that a "Lead Survey" is not required as a deliverable, the A/E shall make a lead-based paint probability assessment of all existing facilities being demolished, repainted, or altered as part of this Project. The assessment shall be based on building age, construction document records at the activity, and visual observations. The assessment shall determine the location, condition, and quantity of all materials suspected of containing lead-based paint. The A/E shall exercise due care in accordance with OSHA standards. The results of the assessment shall be included in the Narrative/Basis of Design.

The A/E shall submit to the PM a brief report of each site investigation visit. The report shall include the names of personnel contacted, a brief synopsis of the findings of the visit, and a list of problems encountered during the site investigation including areas requiring further investigation (such as suspected hazardous materials) not currently within the A/E contract.

2. Deliverables

Deliverables, as discussed above, shall include the following:

- Photographic Record of the site
- Lead Probability Assessment
- Site Investigation Report

D. Other Investigations, Studies or Services

1. General

The A/E may be retained to complete other investigations such as:

- Geotechnical investigations. Including the sampling and analysis of soil borings. See Appendix G.1 for the Scope of Work.
- Surveying and mapping. Including topographic and utility field surveys and production of appropriate site plans/maps. See Appendix G.2 for the Scope of Work.
- Hydrographic surveys. Including bottomland site surveys and production of appropriate plans/maps. See Appendix G.3 for the Scope of Work.
- Hazardous Materials Surveys. Including lead and asbestos surveys. See Appendices G.4 and G.5 for Scopes of Work.
- Seismic Analysis and FEMA Studies. Including the investigation and analysis of existing structures for compliance with current seismic building requirements. See specific requirements within the project specific Statement of Work.
- Energy Analysis. Analysis of existing structures and/or new facilities for compliance with local codes and/or Coast Guard energy criteria. See specific requirements within the project specific Statement of Work.
- Wave Studies. Investigation and analysis of wave or tidal forces on existing or proposed marine structures. See specific requirements within the project specific Statement of Work.
- Master Planning. Planning of the long term development of multi-building and /or campus facilities. See specific requirements within the project specific Statement of Work.
- Homeporting Studies. Site selection studies for potential locations for ships and/or facilities. See specific requirements within the project specific Statement of Work.
- Permit Support. Preparation of permitting plans and/or submissions. See Appendix G.6 for the Scope of Work.

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Chapter 8 CONCEPT DESIGN STUDIES

A. General

This chapter outlines the requirements for a Concept Design Study. A Concept Design Study submittal (approximately 10% of the total design effort) shall be provided only when required by the SOW. This submittal will be presented as a single narrative/graphic report and shall consist of analyses of alternative designs, final concept drawings and cost estimates.

B. Objective

The concept submittal shall provide sufficient information to demonstrate that the User's proposed requirements can be met within the programmed budget and Statement of Work. The concept submittal shall indicate the designer's understanding of the User's functional requirements through the development of up to three alternative schemes for review. Applicable criteria shall be listed and major design constraints and opportunities addressed. Any information needed to support the designer's approaches shall be provided for review.

C. Submittal Requirements

The concept submittal will be a single, 8-1/2"x11" bound volume, including 22"x34" drawing sheets which are folded and placed in envelopes and bound into the volume. The number of copies will be as indicated in the project SOW. The submittal will include the following elements.

1. Executive Summary.

A brief description of the project program, site, phasing requirements, design alternatives, and construction cost estimates. If any construction cost estimate exceeds the ECCP, the A/E shall make recommendations for reducing the project cost and/or scope to within the ECCP while still providing a complete and usable facility.

2. Design Analysis Narrative.

Discuss analysis and conclusions regarding the issues identified below, as applicable, including the alternatives considered, proposed systems and materials, and justification for selection.

a. Architecture.

- 1) Project program, site and building design requirements.
- 2) Architectural design goals.
- 3) Controlling functional considerations, and adjacency requirements.
- 4) Primary architectural systems, including exterior wall and roof systems and interior finishes.
- 5) Barrier free access requirements.

- 6) Future development considerations.

b. Landscape Architecture.

- 1) Existing conditions, design goals, and proposed solutions.

c. Civil Engineering.

- 1) Existing site conditions.
- 2) Demolition and hazardous material abatement (Asbestos, lead, PCBs, etc.)
- 3) Grading and drainage requirements and proposed solutions.
- 4) Existing water and sewer utility conditions and proposed modifications.
- 5) Paving and traffic flow.
- 6) Future expansion considerations.
- 7) Any environmental impacts.
- 8) Permitting requirements.

d. Structural Engineering.

- 1) Alternative and recommended foundation systems (piling, spread footings, etc.)
- 2) Alternative and recommended structural systems.

e. Mechanical Engineering.

- 1) Heating and Ventilation: General and special building, shop, and equipment requirements, heating source (oil, natural gas, electric, etc.)
- 2) Plumbing and Fire Protection: Storm water drainage, building and shop supply and waste systems, special shop waste requirements, compressed air systems, and fire protection systems.

f. Electrical Engineering.

- 1) Existing electrical service conditions and proposed modifications.
- 2) Interior lighting requirements.
- 3) Electrical power distribution, panelboards, conduit and other service equipment.
- 4) Fire alarm system.
- 5) Communications/intercom/PA system

3. Computations.

The gross square footage of the plan(s) must be provided, including a space budget in tabular form comparing approved net square footage with designed net square footage.

The net floor area for each specific programmed area and/or room shall be calculated and shown on drawings to indicate compliance. The floor areas of additional covered or uncovered

spaces related to the structure must also be computed and described. If the individual spaces vary more than plus or minus 10% NSF and/or the GSF is exceeded notes shall be included to justify why the space(s) are larger/smaller than approved.

4. Drawings.

For each proposed design solution provide the following:

a. Building plans, Exterior Elevations and Sections.

Drawings shall be scaled at $1/16" = 1'-0"$. Rooms shall be dimensioned and titled with programmed identification and the programmed NSF and the designed NSF shown in each room. The floor plan shall indicate major zoning requirements and building organization. A building section indicating the structure's vertical relationship to the site as well as internal floor to floor heights are to be shown. Include a typical wall/roof section at $3/4" = 1'-0"$.

b. Perspectives.

A soft pencil or computer generated perspective illustrating the proposed facades

c. Site Plan.

Site plans shall be scaled at $1" = 20'$.

d. Phasing and Equipment Plans.

Floor plans which indicate project phasing and/or shop equipment layout if required.

e. Fire and Life Safety Code Analysis.

Describe building occupancy and identify occupancy separations as per UBC Table 5B and NFPA 101. List the criteria to be used, analysis occupancy classification, occupancy load factors, fire area limits, type of construction, fire protection requirements for building components, occupancy separation exiting and egress and all additional fire protection life safety requirements.

5. Cost Estimates.

Provide separate construction cost estimates in accordance with Appendix E for each Project Phase of each new design solution.

6. Appendices.

- Site Location maps.
- Site visit and meeting notes.
- Site and facilities photographs.

- Recommended additional studies and investigations

D. Final Concept Plan

Based on the User's analysis of the conceptual plans developed, the A/E shall develop a final conceptual plan which will incorporate FD&CC's review comments into a schematic architectural and civil design which represents the desired functional layout of the facility. Any necessary revisions to the Narrative/Basis of Design and Computation will be made and submitted with the final conceptual architectural plan. The cost estimate shall use the summary format as required by the SOW.

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Chapter 9 SCHEMATIC DESIGN

A. General

This chapter outlines the requirements of the Schematic Design (35%) Submittal. This submittal will be presented as a single narrative/ graphic report and consists of a narrative, drawings, outline specifications, and a cost estimate. This chapter defines, by discipline, the specific requirements of the submittal.

B. Objective

The schematic submittal shall be of sufficient detail to:

- show the user how the functional and technical needs will be met
- indicate the designer's approach to the solution of technical aspects to all reviewers
- show compliance to the criteria or justification for non-compliance
- provide a valid estimate of construction cost.

The submittal must be heavily oriented toward creating the proper architectural treatment and establishing the design of the basic structural, mechanical, and electrical systems, and in general, show the FD&CC that the project has been sufficiently thought out and adequate site investigations have been completed to enable it to proceed with no major changes in design.

C. Deviations

All deviations from applicable criterion such as Coast Guard construction criteria, building code, fire protection, life safety, OSHA, and the safety manual, shall be summarized and enumerated in the design analysis. Identify the deviation, citing source and paragraph, criteria requirements and the nature of the deviation, followed by an authority granting waiver and date. If waiver has not been granted, indicate NONE.

D. Submittal Requirements

The schematic submittal will consist of an 8-1/2"x11" bound volume and 22"x34" bound drawing set. The number of copies will be as indicated in the project SOW. The submittal will include the following elements.

E. Drawings (All Disciplines)

The design drawings shall cover all aspects of the project design. Minimum drawing submission requirements, by discipline, are contained in Table 8 (series).

F. Narrative/Basis of Design (All Disciplines)

Minimum requirements for the Narrative/Basis of Design and calculations, by discipline, are contained in Table 9 (series).

G. Outline Specifications (All Disciplines)

Outline specifications shall be submitted by all disciplines. See Appendix D for more information.

H. Cost Estimate

When required by the SOW, a Level 2 estimate reflecting the level of detail consistent with 35 percent submittal shall be provided. Guidance for preparation of the Level 2 estimate is provided in Appendix E.

**Table 9.1 Civil Design
Schematic Submittal Requirements**

| Narrative/Basis of Design | |
|--|---|
| <i>Site Development:</i> | Describe the site of the project, its natural advantages and disadvantages relative to the proposed project, natural vegetation, trees and topography which can be utilized in the enhancement of the completed facility. Outline the proposed landscaping and other site work necessary to complete the site development. Include physical security requirements and considerations. |
| <i>Roads, Driveways, Parking Areas, Walks:</i> | Provide the following information: <ul style="list-style-type: none"> a. A statement of general soil conditions, with a brief outline of soil exploration and testing performed. b. The type and volume of traffic, controlling wheel loads and types and/or classes of roads under consideration. |
| <i>Water Supply:</i> | Provide the following information: <ul style="list-style-type: none"> a. Explanation of existing system, covering the type, capacity, condition, present water use and unsatisfactory elements of component parts for major extensions. b. Statement of type of construction and materials for mains. c. For distribution systems, statement of design, domestic and fire flow, residual pressure, and elevation differentials (should include designer's estimate of pipe sizes). d. Statement of sizes, elevations, capacities, etc., as can readily be determined without long computations or design consideration for reservoirs, treatment units, pumping plants, well pumps, and such units. |
| <i>Sewers and Sewage Disposal Systems:</i> | Provide the following information: <ul style="list-style-type: none"> a. Explanation of existing system covering, in particular, the type, capacity, condition, present flow, and unsatisfactory elements of component parts for major extensions. b. Interpretation of degree of treatment necessary by effluent requirements and units necessary for treatment. c. Statement of materials to be used for sewer systems and sewage treatment plants. |
| <i>Fencing:</i> | Describe type, height, clear zones, and justification for new fencing. Describe height and type of existing fence on or adjacent to the project site. Include a description of any special phasing required to maintain security during removal and installation of fencing. |
| <i>Environmental Pollution Control:</i> | A statement explaining expected environmental pollution and the proposed method of control. A detailed description will be necessary for those facilities directly related to controlling air and water pollution; such as sewage treatment plants, industrial treatment facilities, incinerators, smoke elimination facilities and other similar projects. |
| <i>Storm Drainage:</i> | A statement of the requirements for storm water management for the particular state in which the project is located (i.e. on site detention/point source discharge). Explanation of the design approach to be taken, including materials selection. |
| <i>Environmental Site Issues:</i> | A statement explaining known and potential site environmental issues such as wetlands, shoreline or drainage issues requiring special permitting. |
| <i>Demolition:</i> | A statement discussing proposed demolition of existing structures, suspected or tested hazardous materials, and special disposal requirements. |

Table 9.1
(Continued) **Civil Design Schematic Submittal Requirements**

| Drawings | |
|---|---|
| <i>Location Plan:</i> | Show project location in relation to MAJOR landmarks or features of the installation. Also show the proximity to related facilities which influence project operations. Use insets with an overall view of the station to show widely separated but related facilities. The General Location Plan shall include as much of the activity as necessary to convey meaningful information to someone who has not visited the facility. Show haul routes, borrow areas, disposal areas, laydown and storage areas and plant sites. This drawing may also serve as a cover sheet and should include a vicinity map. An Index of Drawings is required and may be shown on this drawing. |
| <i>Site Plan:</i> | This plan should show all new aboveground site features, complete with dimensions, traffic flow patterns, parking layout, striping, and handicapped parking requirements. Location of new facilities should be referenced to existing, identifiable surface features or survey control points. |
| <i>Existing Site and Demolition Plan:</i> | Provide a complete and accurate map of the site, drawn to an appropriate scale, showing existing contours and spot elevations, as well as all topographic features. All bench mark control points, markers or monuments shall be clearly referenced and described. The survey shall show locations of borings and shall be oriented so that North is to the top or to the left of the sheet. The plan shall be provided with graphic scales, keymaps, north arrow, datum plane and station coordinates of bench marks, and legend to define all symbols used. All demolition should be shown on this drawing and indicated by legend. Demolished features should NOT be shown on subsequent drawings. The new facility should be outlined (by broken line) at the proper location on this sheet. Indicate any areas of site contamination. |
| <i>Utilities Plan:</i> | This plan should show all existing and new water and sewer lines with sizes indicated. The water system should include the approximate elevation of the existing lines and the location of all valves and hydrants. The sewer system should include the location of manholes and pump stations, the inverts and top elevations of all manholes and cleanouts, and slopes of lines. Rough details of pump stations, and other special structures should be provided. Show storm drainage lines; include line sizes and material types, slopes and appurtenances. New and existing mechanical and electrical utilities should also be shown on this plan. |
| <i>Grading and Storm Drainage Plan:</i> | This plan includes all existing and finish contours at maximum 1.0 foot intervals, existing and finish spot elevations as necessary to ensure proper drainage, ditches, existing and new storm drainage pipes with sizes and slopes shown, manholes, catch basins, curb inlets, headwalls, and other necessary structures. Clearly indicate locations of security barriers on man passable pipes and ditches which pass under security fences. |
| <i>Soil Boring Logs:</i> | Logs should be referenced to the boring number in the plan sheet where shown. Soils should be identified in accordance with the Unified Soil Classification System. Standard penetration test blow counts and ground water table elevations shall be shown. Soil boring log elevations shall be referenced to true bench mark elevations shown on grading plan, and a note on the sheet shall indicate when and by whom the borings were taken. The drawing(s) should be complete at the 35% stage. |
| <i>Other Drawings:</i> | Prepare additional drawings, as required, to convey the scope and features of the project. |

| Calculations | |
|-----------------------------|---|
| <i>Design Calculations:</i> | The calculations shall support the plans and specifications. Complete calculations shall be submitted for all design features. All references, codes and design data used in the calculations shall be included and source indicated in the calculations. |

| | |
|--|--|
| Table 9.1 (Continued) | Civil Design Schematic Submittal Requirements |
| <i>Computer outputs:</i> | Shall be identified similar to the calculations and may be referenced as an appendix or attachment |

| Specifications | |
|--------------------------------|---|
| <i>Outline Specifications:</i> | Outline specifications shall be developed per Appendix D. |

**Table 9.2 Architectural Design
Schematic Submittal Requirements**

| Narrative/Basis of Design | |
|--|---|
| <i>Introduction:</i> | Briefly describe the purpose of this project and extent of construction. Include and refer to supporting Appendices at the end of the Basis of Design that should include original scope of work and design conference minutes. |
| <i>Architectural Compatibility:</i> | Briefly describe architectural style of buildings in the immediate vicinity of the site and other installation/base buildings having functions similar to the facility being designed. Discuss the approach to achieving architectural compatibility with nearby facilities (both existing and future construction). Identify design changes made in response to previous review comments. |
| <i>Type of Construction:</i> | Describe type of construction chosen with reference to anticipated building life and degree of combustibility. |
| <i>Building Insulation:</i> | Describe types of insulation to be provided with specific R-values for roof(s), walls, floor(s), etc. |
| <i>Materials and Finishes:</i> | Describe materials for all major items of construction including interior/exterior finishes. |
| <i>Physical and Electronic Security:</i> | Describe requirements including listed criteria defining those requirements. Address design features proposed for use in the construction. |
| <i>Furniture, Fixtures and Equipment List:</i> | List the furniture and furnishings. Identify furnishings that will be included in the construction contract such as systems furniture, fixed seating and all other elements (bulletin boards, marker boards, lockers etc.). Include costs for all furniture/furnishings/equipment to be procured to support the project. |
| <i>Space Programming:</i> | Provide the following: <ol style="list-style-type: none"> Gross area calculation. A room by room tabulation including: <ol style="list-style-type: none"> Net area for each room indicating both the programmed area and the area as designed (include notes to justify spaces greater than 10% above or below the programmed NSF area. Verify that room size is adequate for built-in and loose equipment and furniture and for the identified function. Identify the personnel by function and grade. |
| <i>Water and Moisture Proofing:</i> | <ol style="list-style-type: none"> Identify roofing membrane material. If single ply, identify proposed generic type. Describe means for controlling water penetration and moisture migration through exterior walls. Describe typical roof and wall sections. |
| <i>Hazardous Materials Abatement:</i> | Identify abatement areas and quantities of asbestos, lead based paint, PCBs, mercury or other hazardous materials. |
| <i>Recycled Materials:</i> | Identify major areas for recycling of demolished material and incorporation of recycled products into the design. |

Table 9.2
Continued

Architectural Design Schematic Submittal Requirements

| Drawings | |
|--|---|
| Architectural Plans: | <p>Drawings shall be developed to the extent indicated and drawn to scale (1/4" scale for small and 1/8" for large buildings) showing:</p> <ol style="list-style-type: none"> Types of walls/partitions (secure area construction and acoustical and fire rating), door swings, door openings, windows, and stairs/steps/ramps with pertinent dimensions and notes. Rooms/spaces with names and numbers. Show furniture and furnishings on the "35% Generic Furniture Footprint": furniture that is to be included in the construction contract, loose conventional furniture and any large equipment provided by the customer should be included in the plan. Key Plan on each floor plan sheet when the floor plan is not contained on a single sheet. Enlarge plans at 1/2" scale for toilets, typical dormitory bedrooms, kitchens, stairs, etc. Include toilet partitions, handicapped accessible/ regular toilet fixtures/accessories/drinking fountains, and other provisions for handicapped. Area Tabulation Diagram with gross SF shown for each type of area Special Hazardous Areas (Battery charging areas, flammable storage, etc.) |
| Roof Plan: | May be drawn at smaller scale, showing slopes, internal drains or gutters, crickets, skylights, pipe penetrations, expansion joints, and roof-mounted (mech/elec/etc.) equipment. |
| Architectural Elevations: | <p>Drawings shall be developed to the extent indicated and drawn to scale.</p> <ol style="list-style-type: none"> Exterior finish material and color notations coordinated with "exterior finish material samples". Anticipated mechanical/electrical equipment, louvers and/or other penetrations. Downspouts, flashing, crack control joints, expansion joints, and brick coursing. Doors with frames and windows with frames, mullions, and operating sash. Exterior grade and floor elevation(s). Extent of new additions/alterations related to existing construction. Notes identifying special construction elements related to architectural compatibility or other requirements. |
| Building Sections: | <p>Drawings shall be developed to the extent indicated and drawn to scale.</p> <ol style="list-style-type: none"> Exterior wall type notations (cavity/ veneer)... do not draw wall construction in detail. Outline of interior spaces and exterior limits of walls, floors, roofs, and shading devices. |
| Exterior Wall Sections: | From foundation to roof membrane/parapet top for each type of exterior wall system. Show and label each material. Include "R-values" for wall and roof insulation. |
| Typical Interior Partition Sections: | Showing fire and acoustical ratings. Coordinate with floor plans. |
| Details: | Showing sufficient information to permit development of a reliable cost estimate. Include detail sections of typical roof at eaves or parapet conditions at 3" = 1'-0" scale. |
| Door, Window, and Louver Schedules: | Door, Window, and Louver Schedules - see Table 11.2. |
| Finish, Color, and Signage Schedules: | Interior Finish, Color, and Signage Schedules -- see Table 11.2. |

| | |
|----------------------------------|--|
| Table 9.2 (Continued) | Architectural Design Schematic Submittal Requirements |
| <i>Furniture Plans:</i> | Generic Furniture Footprint drawn to the facility design scale is necessary to ensure that each space has been sized and configured appropriately. |

| Miscellaneous | |
|---------------------------------|-------------------------|
| <i>Architectural Rendering:</i> | If required by the SOW. |
| <i>Architectural Model:</i> | If required by the SOW. |

| Specifications | |
|--------------------------------|---|
| <i>Outline Specifications:</i> | Outline specifications shall be developed per Appendix D. |

**Table 9.3 Structural Design
Schematic Submittal Requirements**

| Narrative/Basis of Design | |
|--|--|
| <i>Introduction:</i> | The Basis of Design shall justify the foundation and structural systems to be used. A brief synopsis shall be included to identify the logical alternatives for structural consideration and to discuss the rationale used to determine the best foundation and structural systems. Attention shall be given to factors such as criteria, cost, local conditions, construction schedule and methods, availability of materials/skilled labor, etc. |
| <i>Description of the foundation:</i> | The description of the foundation shall include the subsurface conditions, the method of analysis and design, and the allowable capacity and time/settlement curves for any differential/uniform settlement expected. |
| <i>Description of the structural system:</i> | The description of the structural system shall include the type of construction, method of analysis and design, all significant design criteria and loads, and all special features to be included on the drawings. Discussion of potential impact to adjacent structures (from piling, excavation, etc.), recommend mitigation and/or monitoring methods. |

| Drawings | |
|------------------------------|---|
| <i>Foundation Plan:</i> | Foundation plan at the same scale as the architectural plans to show the general sizes, location and arrangement of all significant features of the foundation system. Include the layout of all slabs, footings, piers, grade beams, piles, caissons, pile/caisson caps, trenches, pits, openings, depressed and thickened slabs, etc. showing all dimensions and elevations necessary for construction. All dimensions shall be referenced to a column-line grid system oriented about the axes, usually length and width, of the structure and along the center-lines of the major support columns and walls. Elevations may be given using any datum consistent throughout the structural drawings so long as the chosen datum is referenced to the true elevation. Special construction features, sequencing and site conditions such as de-watering, excavation bracing, underpinning, expansive soils, existing structures, etc. which have a significant impact on project cost shall be shown. |
| <i>Framing Plans:</i> | Framing plans, consistent with the foundation plan, to show general sizes, location and arrangement of all significant features of the horizontal framing system. Include the layout of all beams, joists, stringers, purlins, slabs, decks, plates, grating, etc. showing all dimensions and elevations necessary for construction. The elevations shall be referenced to some finished datum such as top of steel, slab, finished floor, concrete, joist, deck, etc. Special construction features, sequencing and site conditions which have a significant impact on project cost shall be shown. |
| <i>Elevations:</i> | Elevations, if necessary, consistent with the foundation plans to show general sizes, location and arrangement of all significant features of the vertical framing system. Include the layout of all columns, walls, beams, girts, stringers, bracing, etc. showing all dimensions and elevations necessary for construction. Reference elevations shall be consistent with the framing plans. |
| <i>Sections and Details:</i> | Sections and Details shall provide sufficient information to identify the general types of material and methods of construction required such that a reliable cost estimate can be developed for the structure. All parts or pieces shall be identified and shown in sufficient detail to provide an accurate representation of their size, connections and spatial relationships to other structural/architectural features. All dimension and elevation references shall be consistent with previous plans. |

Table 9.3
(Continued)

Structural Design Schematic Submittal Requirements

| Calculations | |
|--------------------------|--|
| General: | The analysis and design of all structures and components shall be done in accordance with the criteria applicable to the project. The calculations shall be legible, orderly and easily understandable. At the schematic submittal the calculations should be complete for all major cost contributing components. |
| Cover Sheet: | Cover Sheet shall include the project title, location, construction contract number and the names of the persons originating and checking the calculations. The person checking the calculations shall be a registered engineer practicing structural engineering and shall be a different engineer from the originator. |
| Index: | Index shall include a table of contents showing the subject and page number for each topic (introduction, design criteria, calculations) and subtopic (loads, materials, references, wind analysis, footing design, wall design, column design, etc.) addressed in the calculations. Each page, consecutively numbered, shall identify the total number of pages contained in the calculations (sheet __ of __), the revision number, date, project name, project location and be initialed by the originator and the checker. |
| Introduction: | Introduction shall include a brief statement describing the structural system, significant design parameters and any restrictions that may affect the project design. |
| Design Criteria: | Design Criteria shall be provided and shall include the following: Loads - Include all loadings, forces, temperature changes, induced settlements, etc. that may affect the design. The list shall include the application/location, magnitude and units of measure for each load. Restrictions - Include all limiting factors such as deflection limits, (horizontal and vertical), height restrictions, special tolerances for installing or operating equipment, or other special restrictions that may affect the design of the structure. Materials - Include all materials to be used and their allowable stress limits or yield points. The list shall include material type and grade, class, allowable stress, yield and appropriate units of measure. References - Include all criteria, accepted standards, manuals, codes, texts, papers, or other design information used in the analysis and design that is accepted in a public domain. All references shall be appropriately identified. |
| Calculations: | Calculations shall include the analyses and designs of all (major cost contributing elements) beams, columns, walls, foundations, slabs, bracing, diaphragms, equipment supports, etc. and the connections to each other to provide a safe, stable, efficient and cost effective structural system. An adequate number of sketches with sufficient detail to make the designer's intentions clear, concise and easily understandable shall be provided. All assumptions, code references, standards, criteria, drawings and computer outputs shall be noted as necessary. |
| Computer Outputs: | Computer Outputs shall be identified similar to the calculations and may be referenced as an appendix or attachment. Document the program name, source and version. All models used for computer input shall be provided. The models shall show nodes/joint, element/members, materials/properties, and all loadings, temperature changes, induced settlements/deflections, etc., and a list of their combinations considered in the analysis. Computer results shall include an output summary listing for maximum/minimum stresses/forces and deflections for each element and the structure reactions for each loading combination. |

Specifications

| | |
|--------------------------------|---|
| Outline Specifications: | Outline specifications shall be developed per Appendix D. |
|--------------------------------|---|

**Table 9.4 Mechanical Design
Schematic Submittal Requirements**

| Narrative/Basis of Design | |
|--|--|
| <i>Introduction:</i> | The Basis of Design shall be a narrative presentation of facts that will clearly indicate the selected mechanical/plumbing systems and/or the proposed alternative systems to be analyzed. |
| <i>Plumbing Systems:</i> | A discussion and description shall be provided for: <ul style="list-style-type: none"> a. Number and types of plumbing fixtures b. Selection of piping materials c. Estimated maximum and minimum water pressure d. Availability/capacity of system connected into. |
| <i>Heating, Ventilation, and Air Conditioning:</i> | A discussion and description shall be provided for: <ul style="list-style-type: none"> a. Calculated heating and cooling loads b. Documentation of unusual temperature and humidity requirements c. Ventilation rates with a statement regarding compliance with ASHRAE Standard 62 d. Discussion of areas to be conditioned and equipment locations/space requirements e. Documentation of customer's preference for the HVAC control system f. Information on available energy sources/utilities, such as natural gas, steam from central heating plant, chilled water from central chiller plant, etc. g. For projects requiring an energy analysis, list alternative systems to be analyzed with a brief statement as to why each system is justified for further analysis. h. Any other HVAC design features such as industrial ventilation requirements, provisions for future heating/cooling plant additions, etc. i. Description of the selected HVAC systems and controls, including energy sources. j. Special HVAC requirements (hazardous areas such as welding hoods, dip tanks, etc.) |
| <i>Refrigeration (Cold Storage):</i> | Refrigeration (Cold Storage): Describe refrigeration/cold storage requirements, proposed equipment, vapor barrier types of refrigerants, etc. |
| <i>Fuel Distribution and Storage:</i> | Bulk and Ready Issue Petroleum Fuel Distribution and Storage: Discuss storage, distribution, leak detection, containment, overfill protection etc. |
| <i>Energy Conservation::</i> | A discussion and description of proposed systems to manage energy consumption. |
| <i>Miscellaneous Mechanical Systems:</i> | Miscellaneous Mechanical Systems: Describe any special mechanical systems. |

| Drawings | |
|-----------------|--|
| <i>General:</i> | Mechanical floor plans shall be not less than 1/8"=1'-0". Floor plan scales of 1/4"=1'-0" should be considered when the complexity of the work results in overcrowding of the drawings such as in mechanical room layout and in the design of clinics. |

| Table 9.4 (Continued) | Mechanical Design Schematic Submittal Requirements |
|----------------------------------|---|
| Drawings: | <p>HVAC Floor Plans showing the location of major equipment and ductwork. All ductwork shall be shown double line, to scale.</p> <ol style="list-style-type: none"> Plumbing Floor Plans showing potable water, DWV, compressed air, etc. Basic HVAC system and riser diagrams. HVAC and plumbing equipment schedules, showing sizes of major equipment. HVAC Design Conditions Schedule including tolerances of inside temperatures and relative humidities. Basic HVAC control diagrams and written sequence of control. Site layout showing points of utility connections, including sewer invert elevations at the five foot line. Exterior piping including chilled/hot water, condenser water, plumbing/ sanitary, steam, fuel, compressed air and gas piping, etc. Equipment locations. Fuel storage general arrangement. |

| Calculations | |
|---------------------|--|
| General: | <p>Air conditioning and heating calculations shall be in accordance with the latest edition of ASHRAE guidance. At a minimum, calculations shall include:</p> <ol style="list-style-type: none"> Source documentation for all design values used. Tabulation of inside and outside design temperatures and relative humidities. Include tolerance values for inside conditions. Building section sketches (i.e. roof, ceiling, and walls) showing U-value calculations HVAC calculations including tabulation of process/electronic loads Psychometric plots showing all state points for each air handling unit. Plumbing calculations including water heating and storage requirements. Compressed air and industrial gases including demand tabulation. Pump head calculations. Rule of thumb estimates for fitting losses are not acceptable. Manufacturer's catalogue cuts documenting equipment selection points. |

| Specifications | |
|--------------------------------|---|
| Outline Specifications: | Outline specifications shall be developed per Appendix D. |

**Table 9.5 Fire Protection Design
Schematic Submittal Requirements**

| Narrative/Basis of Design | |
|--|---|
| <i>Introduction:</i> | <p>Include the type of occupancy per Life Safety Code, NFPA-101, and if sprinkler protection will be provided.</p> <p>Prior to the design of any structure, specific questions regarding fire protection must be raised in order to address the occupants' particular needs and acceptable levels of fire risk as avenues of egress and fire rated separations are all basic to the floor plan. It is essential that any answers about fire protection be reached as early as possible.</p> |
| <i>Type of Construction:</i> | Clearly identify and describe the type of construction to be used as defined by the Uniform Building Code, detailing the maximum fire area and separation of structures. Submit occupant loading and exiting calculations, conforming to the NFPA 101 (Life Safety Code). |
| <i>Fire Extinguishing System:</i> | Identify the fire extinguishing system to be provided detailing design parameters and area to be protected listing criteria references. The specific hazard to be protected (i.e. light ordinary, extra, etc.) must be clearly outlined in addition to the density provided over the desired operating area. Calculations showing that water flow is adequate to meet sprinkler demands are required which necessitates a field survey by the A/E to determine actual water supply data. Design shall be in accordance with Mil-Handbook 1008-B and NFPA criteria as appropriate. |
| <i>Fire Alarm and Detection Systems:</i> | Clearly describe fire alarm and/or fire detection system to be provided. List all actuating and reporting devices and functions the system will perform including a sequence of operations. Identify, with special emphasis on the base wide fire reporting system (if applicable), any existing fire alarm equipment, annunciator locations, etc. |

| Drawings | |
|--------------------------------|--|
| <i>General:</i> | Fire protection criteria are more frequently shown on the drawings of other disciplines except for more complex fire protection systems. |
| <i>Civil Drawings:</i> | These drawings should show all existing and new water lines. Particular attention shall be made to the location of existing and proposed fire hydrants to ensure compliance with Mil-Handbook-1008-B. Show required valves, point(s) of connection to sprinkler system supply lines. |
| <i>Architectural Drawings:</i> | Architectural drawings should show a general building layout with regard to life safety, as defined by the Life Safety Code, NFPA 101; and fire area separation as required by the UBC. Included in this design should be the location of exits, fire walls, corridors, stairwells, and any other required fire rated enclosure. The designer should anticipate the occupants' range of activities during a 24 hour day, 7 days week period to determine the required life safety needs of the occupant. It is critical that all life safety questions be answered early in the project because the floor plan is directly involved. |
| <i>Mechanical Drawings:</i> | Include the locations of any required fire or smoke dampers. locate the sprinkler riser on the plans; do not show the layout of the overhead sprinkler piping. clearly identify any areas to be protected by sprinklers, CO ² or other automatic extinguishing system. |

| | |
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| Table 9.5 (Continued) | Fire Protection Design Schematic Submittal Requirements |
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| | |
|-----------------------------|--|
| <i>Electrical Drawings:</i> | <ol style="list-style-type: none"> 1) The electrical site plan should show the location of new exterior fire alarm reporting stations and the point of connection of new equipment to the base fire alarm system. 2) The electrical floor plan should show all fire alarm and detection devices. If an electrically controlled suppression system is utilized, show these devices on a separate floor plan. Include all manual pull stations, automatic detectors, control panels, and audible alarms. show the location of exit lights and emergency lights. 3) show a fire alarm riser diagram which includes all fire alarm equipment and interconnections. Indicate the source of power supply and connection to base fire alarm system. 4) show a fire suppression system riser diagram which includes all devices. |
|-----------------------------|--|

Calculations

| | |
|-----------------|--|
| <i>General:</i> | Provide water supply data and calculations verifying the availability of water for sprinkler systems. In addition, occupancy calculations are required in order to conform with NFPA 101, Life Safety Code. Provide quantity calculations for CO ₂ and/or clean agent systems to size tanks and ensure adequate space is provided on the architectural plans. |
|-----------------|--|

Specifications

| | |
|--------------------------------|---|
| <i>Outline Specifications:</i> | Outline specifications shall be developed per Appendix D. |
|--------------------------------|---|

**Table 9.6 Electrical Design
Schematic Submittal Requirements**

| Narrative/Basis of Design | |
|---|---|
| <i>Introduction:</i> | The Basis of Design shall be a narrative presentation of facts that will clearly indicate the selected electrical, telecommunications, security, cable TV systems and/or the proposed alternative systems to be analyzed. |
| <i>Primary Distribution:</i> | <p>Include the following:</p> <ol style="list-style-type: none"> Describe the primary source of power. Where the source of power is located. Statement relative to the adequacy of the primary supply at the point of take-off. Electrical characteristics of power supply to station, or portion involved, including circuit interrupting and voltage regulation requirements. Estimate total connected load and resulting KVA demand load by applying proper demand (state operating assumptions) and diversity factors. Basis for selection of secondary voltage. Distribution (overhead or underground). Type of conductors, such as copper or aluminum. Type of conduit or duct, if used. A statement describing pertinent standards of design, such as voltage drop, physical characteristics of overhead or underground circuits, clearances, etc. A statement identifying ownership of transformers, switchgear and distribution system. |
| <i>Primary Service Transformation to Secondary Service:</i> | <p>Include the following:</p> <ol style="list-style-type: none"> Primary and secondary voltage rating. Describe the transformer or unit substation giving electrical characteristics. Describe the proposed primary and secondary switchgear. Describe the proposed primary and secondary protection devices. |
| <i>Other Electrical Systems:</i> | <p>Describe the following:</p> <ol style="list-style-type: none"> Lighting systems Power systems Emergency lighting Emergency power Grounding system or systems Telephone system Other systems such as television, paging, call, etc. Physical and electronic security features such as IDS, access control, tempest, etc. |
| <i>Design Standards:</i> | Provide a statement describing proposed pertinent standards of design, such as voltage regulation, lighting intensities, and type of lighting fixtures. |

| Drawings | |
|-----------------|---|
| <i>General:</i> | Drawings: Electrical floor plans shall be not less than 1/8"=1'-0". Floor plan scales of 1/4"=1'-0" should be considered when the complexity of the work results in overcrowding of the drawings such as in electrical room layout. |

Table 9.6
(Continued) **Electrical Design Schematic Submittal Requirements**

| | |
|---|---|
| <i>Existing Site and Demolition Plan:</i> | This plan should be developed to approximately 50% completion. Interior demolition should be shown on a separate plan. |
| <i>Site Plan:</i> | This plan should be developed to approximately 50% completion. Information on existing conditions should be complete and field checked. |
| <i>Lighting Plan(s):</i> | These plans should show a building's full floor plan (first, second, etc.) with the layout and type of fixtures to be used and the design footcandle levels for all types of lighting systems. |
| <i>Power Plan(s):</i> | These plans should show a building's full floor plan (first, second, etc.) with the location of receptacles, panelboards, switchboards, motor control centers, transformers and any other major equipment throughout the inside and outside of the building or project. |
| <i>Single Line Diagram:</i> | This drawing should be developed to approximately 50% completion showing all panels, switchboards, motor control centers, transformers and other major electrical loads such as M.G. sets, A/C chillers, etc. |
| <i>Additional Plans/Risers</i> | <ol style="list-style-type: none"> 1) Telephone 2) IDS 3) Others as required 4) Public address system 5) Computer network |

Calculations

| | |
|----------------|---|
| <i>General</i> | Provide calculations to back up sizing of major pieces of electrical equipment. The degree of completion shall be comparable to that of the narrative and drawings. |
|----------------|---|

Specifications

| | |
|-------------------------------|---|
| <i>Outline Specifications</i> | Outline specifications shall be developed per Appendix D. |
|-------------------------------|---|

Chapter 10 PROGRESS DEVELOPMENT**A. General**

This chapter outlines the requirements of the Progress Development (65%) Submittal. This submittal will be presented as a single narrative/graphic report and consists of a narrative, drawings, specifications, and cost estimate. This submittal will incorporate all the requirements of the corrected Schematic design plus additional information to complete this level of design.

B. Objective

The 65 percent design submittal is intended to provide a progress review of the design drawings and specifications. It is intended to be more of an "over the shoulder" review than a formal submittal package. The 65 percent design will be a logical further development of the corrected schematic design. The design shall define all elements to be incorporated into the project to a level demonstrating a complete functional design consistent with a 65 percent design effort.

C. Review Comments and Revisions

Any significant design changes that are necessary, due to review comments or other reasons, shall be resolved at this design submittal. Any changes at this time should only be for the purpose of coordination and refinement of the complete design package.

D. Deviations

All deviations from applicable criterion such as Coast Guard construction criteria, building code, fire protection, life safety, OSHA, and safety manual, shall be summarized and enumerated in design analysis. Identify deviation, citing source and paragraph, what criteria require and nature of deviation, followed by authority granting waiver and date. If waiver has not been granted, indicate NONE.

E. Submittal Requirements

The concept submittal will consist of an 8-1/2"x11" bound volume and 22"x34" bound drawing set. The number of copies will be as indicated in the project SOW.

F. Drawings (All Disciplines)

The design drawings shall cover all aspects of the project design. The drawings should be of sufficient detail to indicate a complete and coordinated design effort appropriate for review. The drawings shall include all the sheets that will be in the final set to indicate what the final package will include.

G. Narrative/Basis of Design (All Disciplines)

The Narrative/Basis of Design and computation developed and submitted at Schematic shall be expanded to include only review comments and changes addressed during the schematic review.

H. Draft Specifications (All Disciplines)

Draft specifications shall be provided incorporating any comments from previous reviews. See Appendix D for more information.

I. Cost Estimate

When required by the SOW, a Level 2 estimate reflecting the level of detail consistent with 65 percent submittal shall be provided. Guidance for preparation of the Level 2 estimate is provided in Appendix E.

Chapter 11 CONSTRUCTION DOCUMENTS

A. General

This chapter outlines the requirements of the Construction Documents (Final) Submittal. This submittal will be presented as a narrative report with cost estimate, stamped reproducible documents and specifications complete and ready for construction. This submittal will incorporate all the requirements of the corrected Schematic (and/or Progress Development) Design, plus additional information to complete the design.

B. Objective

The Construction Document submittal is intended to present a biddable design package conforming to all the appropriate criteria.

C. Review Comments and Revisions

Changes to the approved corrected schematic design will not be permitted unless these changes are the result of review comments, changes in criteria, changes in SOW, or unforeseen problems necessitating the A/E to alter the approved design. All the changes will be resolved through the EIC before proceeding.

D. Deviations

All deviations from applicable criteria such as Coast Guard construction criteria, building code, fire protection, life safety, OSHA, and safety manual, shall be summarized and enumerated in design analysis. Identify deviation, citing source and paragraph, what criteria require and nature of deviation, followed by authority granting waiver and date. If waiver has not been granted, indicate NONE.

E. Submittal Requirements

The Construction Document Submittal will consist of the following:

- 30"x42" vellum, Stamped, Original drawing set, unbound
- 8-1/2"x11" Stamped, Original specification, unbound.
- Electronic Copies of each on CD
- 8-1/2"x11" Final Design report, bound
- Final Cost Estimate.

Minimum requirements for the drawings, specifications, report and cost estimate, by discipline, are contained in Table 11 (Series). Requirements for submission of electronic media is contained in Appendix C.

F. Coordination with Government Contract Documents

FD&CC prepares both the Contract Solicitation and Division 01000 of the project specifications. While primary responsibility for coordinating the plans and specifications are the responsibility of the EIC, the A/E shall also review all the documents and ensure they are properly coordinated. This is particularly important when the solicitation calls for special structuring of the bids (e.g. Unit Prices, Additive Bid Items).

For more information on structuring of bids, see Chapter 5.

G. Final Specifications (All Disciplines)

Final specifications shall be provided incorporating any comments from previous reviews. See Appendix D for more information.

H. Cost Estimate

When required by the SOW, a Level 2 estimate reflecting the level of detail consistent with a 100 percent submittal shall be provided. Guidance for preparation of the Level 2 estimate is provided in Appendix E.

**Table 11.1 Civil Design
100% Submittal Requirements**

| Drawings | |
|---|---|
| <i>100% Submittal:</i> | <p>The 100% submission should include all drawings required for a 35% submittal plus all necessary detail sheets to complete the civil engineering portion of the project. In addition, other sheets required to show such information as profiles and cross sections for roads and ditches, profiles of sewer and drainage systems, and details of all appurtenances shall be included. The designer should review all Guide Specifications to be used in connection with the Civil Drawings. Most of the Guide Specifications contain design information in notes that indicate what must be shown on the drawings for proper coordination with the specifications. Some Guide Specifications contain standard details which must be included on the drawings if they are applicable to the project.</p> <p><i>Drawings shall be fully coordinated with the other disciplines and the specifications.</i></p> |
| <i>Location Plan:</i> | See Schematic Requirements |
| <i>Existing Site and Demolition Plan and Detail Drawings:</i> | <p>Show the following:</p> <ol style="list-style-type: none"> All items to be demolished clearly shown Limits of removal Complete description of items to be removed Details, where necessary, of items to be removed Depth and dimension of affected pipelines and foundations Preloading of site Storage areas for materials to be removed |
| <i>Site Plan and Detail Drawings:</i> | <p>Show the following:</p> <ol style="list-style-type: none"> Site datum All necessary layout dimensions Street profiles Pavement sections and joint layout and details Handicapped provisions details Parking and other pavement markings Curb and gutter details Walk details Equipment pads Temporary facilities, locations and services Pavement repair details (i.e. utility crossings) Guard post details Fencing and gates location and details including security barriers for openings beneath fences and gates Wheel stop details Construction limits (if critical) All existing aboveground features which are not to be demolished Street sign details |

Table 11.1
(Continued)

Civil Design 100% Submittal Requirements

| | |
|---|---|
| <p><i>Grading and Storm Drainage Plans and Detail Drawings:</i></p> | <p>Show the following:</p> <ul style="list-style-type: none"> a. Existing and finish contours b. Existing and finish spot elevations c. Ditch profiles and sections d. Erosion protection e. Storm drainage piping layout, new and existing including security barriers f. Storm drainage structure details including security barriers g. Slopes and inverts of all pipes and profiles where necessary h. Inverts and top elevations of all structures i. Frames, grates and covers details j. Class or gauge of pipe k. Clearing and grubbing limits l. Grassing limits m. Benchmark information |
| <p><i>Utility Plans and Detail Drawings:</i></p> | <p>Show the following:</p> <ul style="list-style-type: none"> a. Overall layout of systems, showing line sizes b. New and existing systems shown c. Valve and fire hydrant locations d. Trench details showing bedding, backfill and utility warning tape e. Sizes of all components of systems indicated f. Building services coordinated with building plumbing drawings g. Separation of water and sewer lines h. Back-flow preventers i. Manhole spacing and details (including top and invert elevations) j. Clean-out location k. Pipeline profiles (gravity sewers normally, plus force main when required by State Permitting Agency) l. Manhole, frames and cover details m. Pump station location and details n. Air release valves location and details o. Locations coordinated with existing and other utilities p. Areas of hazardous material abatements |

Calculations

| | |
|------------------------------------|--|
| <p><i>Design Calculations:</i></p> | <p>Revise the Schematic calculations and supplement as required for 100% design. Submit in same format as for Schematic submittal.</p> |
| <p><i>Computer outputs:</i></p> | <p>Shall be identified similar to the calculations and may be referenced as an appendix or attachment</p> |

Specifications

| | |
|-------------------------------|--|
| <p><i>Specifications:</i></p> | <p>Final specifications shall be developed per Appendix D.</p> |
|-------------------------------|--|

**Table 11.2 Architectural Design
100% Submittal Requirements**

| Drawings | |
|-----------------------------------|--|
| 100% Submittal: | <p>The 100% submission should include all drawings required for a 35% submittal plus all necessary detail sheets to complete the architectural portion of the project.</p> <p><i>Drawings shall be fully coordinated with the other disciplines and the specifications.</i></p> |
| Architectural Floor Plans: | <p>Floor Plans Showing:</p> <ol style="list-style-type: none"> Complete dimensions. Spaces labeled with doors and windows numbered and door swings indicated. Enlarged plans/elevations/sections and details cross referenced per MIL-HDBK-1006/1 Reference Symbol guidance. Wall and partition thickness, secure area partition type, partitions that extend to overhead structure, fire and acoustical rated partitions (show rating). Reference symbols for each related section/detail. Water coolers, janitor sinks, floor drains, fire extinguisher cabinets, access ladders and hatches, "walk-off" mats in exterior entrances, public phones, signage directories, and built-in shelving and equipment. Wall and floor expansion/crack control joints. Boundaries of floor finish material changes and floor level transitions. Ramps, steps, and stairs. Necessary notes and schedules (use Key Notes for labels where practical). Key Plans when an entire floor is not shown on a single sheet. Exterior Elevation reference symbols may be shown on Key Plan. Clear designation between new and existing work. Limits of demolition and hazardous material removal |
| Reflected Ceiling Plans: | <p>Reflected Ceiling Plans at same scale as floor plans showing:</p> <ol style="list-style-type: none"> All ceiling types (identified by note or legend) and acoustical ceiling tile grid(s). Junctions of different ceiling finishes and ceiling level changes. All partitions with fire walls and security/acoustical partitions which extend to structure above noted. HVAC diffusers and returns. Light fixtures. Access Panels. Ceiling mounted signage. All required notes. |
| Roof Plans: | <p>Roof Plans showing:</p> <ol style="list-style-type: none"> Roof layout with all pertinent dimensions. Parapet walls, expansion joints, crickets, overflow scuppers, roof drains, gutters, and downspouts. Direction of roof slope and amount of slope (minimum 1/2" per foot desired). All valleys shall have positive slope. All roof mounted equipment (coordinated with structural, mechanical, and electrical drawings). Mount air terminals (lighting rods) on parapet terminals. All roof penetrations, vents, exhausts, skylights, monitors, and access hatches. Reference symbols for wall sections, building sections, and details. All necessary notes. |

Table 11.2
(Continued)

Architectural 100% Design Requirements

| | |
|----------------------------------|--|
| <i>Enlarged Floor Plans:</i> | <p>Enlarged Floor Plans showing:</p> <ol style="list-style-type: none"> Enlarged toilet plans at 1/2" = 1'-0" with toilet fixtures (handicapped accessible and regular types) and toilet accessories labeled and special handicapped access clearances indicated. Kitchen layout with dimensions and equipment. Stairs with runs and widths, landings, and railings dimensioned. All necessary notes. |
| <i>Architectural Elevations:</i> | <p>Architectural Elevations showing:</p> <ol style="list-style-type: none"> All sides of building with vertical dimensions and floor level elevations. All finish materials and special requirements labeled. Expansion and crack control joints. Exterior doors. Windows with operating sash indicated. Exhaust fans, louvers, and grills. Gutters, downspouts, splash blocks, and overflow scuppers. Roof mounted equipment, exhaust stacks, and antennas. Reference symbols for section and detail cuts. All necessary notes. |
| <i>Building Sections:</i> | <p>Building Sections (same scale as Architectural Floor Plans, when practical) showing:</p> <ol style="list-style-type: none"> Floor, wall, partition, ceiling, and roof information for a minimum of one transverse and one cross section through entire building. Reference symbols for section and detail cuts. Doors, windows, finish materials, expansion joints, casework, toilet partitions, ladders, and signage. Lighting, HVAC registers and returns, built-in equipment |
| <i>Interior Elevations:</i> | <p>Interior Elevations/Sections showing:</p> <ol style="list-style-type: none"> Toilets with fixtures, vanities, partitions, finishes, and accessories with labels and reference symbols. Kitchen/food preparation area with equipment outlined, electrical outlets and switches at proper heights, fire extinguishers, alarm bells/horns, and HVAC equipment and registers/ returns. Janitor closets with shelving, wall hooks, and built-in equipment. Stairs with dimensioned railings, treads, risers, nosings, and framing. |

| Table 11.2 (Continued) | Architectural Design 100% Submittal Requirements |
|---|---|
| Wall Sections, Sections, and Details showing: | <p>Wall Sections, Sections, and Details showing:</p> <ol style="list-style-type: none"> All sections and details (including flashing, drip moldings, weepholes, vents, etc.) necessary for construction. Sections at minimum scale of $3/4" = 1'-0"$. Isometric details for each roof flashing condition at minimum scale of $3" = 1'-0"$ and with all applicable notes. Isometric detail of scuppers showing all flanges. Joint covers for metal coping covers and gravel stops. Roof crickets. Wall and roof insulation with "R-values". Door and window frame "head, jamb, and sill" details. Also astragals, weatherstripping, thresholds, floor level changes (such as at entrances), and physical security features. Toilet partition, shower pan, floor/roof/ balcony drains, and waterproofing details. Expansion joints, crack control joints for stucco/brick/cmu/concrete/ceramic tile/plaster, and joints between different finish materials. Stair/balcony railings and mounting brackets, wall-mounted doorstop bracing, vanity bracing, locker/ weapons rack mounts, curtain wall/ large window protective railings, and partition corner/corridor wall bumpers. Signage construction and method of mounting. Necessary notes. Titles referenced by Reference Symbol convention to Plans, Elevations, and Building Sections. |
| Schedules: | <p>Schedules showing:</p> <ol style="list-style-type: none"> Doors and frames with fire and acoustical rating, physical security feature notes, and detail reference numbers. Windows with frame material, glazing type, fire and acoustical rating, physical security feature notes, and detail reference numbers. Louvers with frame, vane operation, fire rating, physical security feature notes, and detail reference numbers. Interior finish materials for floor, base, walls, wainscot and ceiling with ceiling height. built-in cabinet finishes, window blinds, toilet partitions, bulletin boards and any other visible item attached to the building interior. Finishes for Systems Furniture shall be included. Also include exterior finish materials and color. Signage with frame, mounting, letter style and height, finish, color, text, and location information. Equipment. |

| Specifications | |
|-----------------|---|
| Specifications: | Specifications shall be developed per Appendix D. |

**Table 11.3 Structural Design
100% Submittal Requirements**

| Drawings | |
|----------------------------|---|
| 100% Submittal: | <p>The 100% submission should include all drawings required for a 35% submittal plus all necessary detail sheets to complete the structural portion of the project.</p> <p><i>Drawings shall be fully coordinated with the other disciplines and the specifications.</i></p> |
| General Conditions: | <p>Show the following:</p> <ol style="list-style-type: none"> Design criteria for loads, materials, and references, General notes for the project, Material notes such as structural steel, concrete, masonry, etc., Bid information such as pile/caisson lengths, Special load test requirements, Special inspections requirements Other information/instructions to contractor, Abbreviations and symbols used for structural drawings. |
| Foundation Plan: | <p>Show the following:</p> <ol style="list-style-type: none"> Layout of foundation support systems showing all dimensions and elevations necessary for construction, Size or schedule references for all foundation features such as footings, grade beams, piles, caissons, pile/caisson caps, etc., Control/expansion joints in floor slab and foundation walls, Trenches, pits, openings, depressed/ thickened slabs, Test pile/caisson location, Special construction features - de-watering, excavation, bracing, under-pinning, etc., Special construction sequencing, Existing site conditions/features, North arrow (orient plans so that north is to the top or left of the sheet), Graphic scales. |
| Framing Plans | <p>Show the following:</p> <ol style="list-style-type: none"> Layout of horizontal framing elements showing all dimensions, orientation and elevations necessary for construction – Elevations shall be referenced to some finished datum such as top of steel, slab, finished floor, concrete, etc. Size or schedule references for all horizontal framing elements such as beams, joists, slabs, decks, grating, etc., Slab control/expansion joints, Openings requiring special framing or reinforcing, Location of splices, brackets, penetrations, sleeves, embedments, bracing, weldments, etc., Special temporary bracing, shoring or forming, Other special requirements, such as equipment clearances, travel distances for hoists and cranes, etc., North arrow (orient plans so that north is to the top or left of the sheet), Graphic scales. |

| | |
|--|---|
| <i>Elevations</i> | <p>Show the following:</p> <ol style="list-style-type: none"> Layout of vertical framing elements showing all dimensions, orientations and elevations necessary for construction – reference elevations shall be consistent with framing plans. Size or schedule references for all vertical framing elements such as column, walls, piers, beams, bracing, etc., Wall control/expansion joints, Openings requiring special framing or reinforcing Location of splices, brackets, penetrations, sleeves, embedments, bracing, weldments, etc., Special temporary bracing, shoring or forming, Other special requirements such as equipment, clearances, travel distances for hoists and cranes, etc., Graphic scales. |
| <i>Sections and Details:</i> | <ol style="list-style-type: none"> Layout of all sections and details showing all parts, shapes, sizes, materials, dimensions, elevations, arrangement and orientation necessary for construction, Standard connections or schedule references for forces, fasteners, welds, plates, clips, ties stirrups, pins, etc., All special connections completely detailed to a point where no further engineering is necessary, Concrete/masonry wall reinforcement details showing size, clearances, placement, shape, etc., Lintel details or schedule references for loads, sizes, materials, arrangement, etc., Anchor bolts, base plates, bearing plates, or schedule reference for materials, size, thickness, welds, embedments, threaded parts, projections, etc., Diaphragm deck type, gauge, yield strength, minimum number of spans or length, fastener type and pattern, Applicable special notes and instructions, Graphic scales. |
| <i>Structural Notes and Schedules:</i> | <ol style="list-style-type: none"> Provide all information/instructions for fabrications, forming, placement, erection, installation, etc. necessary for construction. Schedules for beams, lintels, joist, trusses, frames, piles, caissons, footings, pile/caisson caps, grade beams, slabs, etc. Calculated column loads, beam shear/reaction and moments, footing pressures, pile/caisson capacities/loads (vertical and horizontal) etc. Special instructions, materials, process, etc. |
| <i>Other Drawings:</i> | <ol style="list-style-type: none"> Layout of structural systems for special fabrications and construction such as space trusses/frames, long span trusses, Vierendeel trusses, shells, towers, etc. Temporary structures to be dismantled/relocated |

Calculations

| | |
|----------------------|---|
| <i>Calculations:</i> | <p>Calculations shall include the analysis and design of all (major cost contributing elements) beams, columns, walls, foundations, slabs, bracing, diaphragms, equipment supports, etc. and the connections to each other to provide a safe, stable, efficient and cost effective structural system. An adequate number of sketches with sufficient detail to make the designers intentions clear, concise and easily understandable shall be provided. All assumptions and references to codes, standards, criteria, drawings and computer outputs shall be noted as necessary.</p> |
|----------------------|---|

Specifications

| | |
|------------------------|--|
| <i>Specifications:</i> | <p>Final specifications shall be developed per Appendix D.</p> |
|------------------------|--|

**Table 11.4 Mechanical Design
100% Submittal Requirements**

| Drawings | |
|------------------------|---|
| 100% Submittal: | <p>The 100% submission should include all drawings required for a 35% submittal plus all necessary detail sheets to complete the mechanical portion of the project.</p> <p><i>Drawings shall be fully coordinated with the other disciplines and the specifications.</i></p> |
| General: | Mechanical floor plans shall be not less than 1/8"=1'-0". Floor plan scales of 1/4"=1'-0" should be considered when the complexity of the work results in overcrowding of the drawings, such as in mechanical room layout and in the design of hospitals. |
| Drawings: | <ul style="list-style-type: none"> a. HVAC Floor Plans showing the location of major equipment and ductwork. All ductwork shall be shown double line, to scale. b. Plumbing Floor Plans showing potable water, DWV, compressed air, etc. c. HVAC and plumbing riser diagrams. d. HVAC and plumbing equipment schedules, showing sizes of major equipment. e. HVAC Design Conditions Schedule including tolerances of inside temperatures and relative humidities. f. Basic HVAC control diagrams and written sequence of control. g. Site layout showing points of utility connections, including sewer invert elevations at the five foot line. h. Exterior piping including chilled/hot water, condenser water, plumbing/ sanitary, steam, fuel, compressed air and gas piping, etc. i. Equipment locations. j. Fuel storage general arrangement. k. Roof Plans showing locations of equipment and ductwork l. Large Scale Plans as need to show congested areas m. Sections, elevations and details as required for MEP coordination n. Control Diagrams and written sequence of control o. Legends p. HVAC equipment and Plumbing Fixture Schedules q. Notes r. Design Conditions s. Other Details as required |

| Calculations | |
|---------------------|--|
| General: | Corrected to include all previous submittal review comments and/or a clear statement why the review comment was not complied with. |

| Specifications | |
|--------------------------------|---|
| Outline Specifications: | Outline specifications shall be developed per Appendix D. |

**Table 11.5 Fire Protection Design
100% Submittal Requirements**

| Drawings | |
|--------------------------------|---|
| <i>100% Submittal:</i> | <p>The 100% submission should include all drawings required for a 35% submittal plus all necessary detail sheets to complete the fire protection portion of the project.</p> <p><i>Drawings shall be fully coordinated with the other disciplines and the specifications.</i></p> |
| <i>Civil Drawings:</i> | <ol style="list-style-type: none"> Show all new and existing water piping including sizes. Show new and existing valve and fire hydrant locations ensuring conformance with MIL-HDBK-1008-B. New valve and fire hydrants shall require an installation detail complete with guard posts. Show the water line supplying the sprinkler riser with the connection into the building. Show the location of any required fire pump or water storage tank. |
| <i>Architectural Drawings:</i> | <ol style="list-style-type: none"> Clearly show with details the location and rating of smoke and firewalls. Clearly indicate the specific hourly fire rating. A detail of the fire and smoke wall construction must be provided along with the particular Underwriters' Laboratories listing obtained from the latest edition of the U.L. Fire Resistance Directory. Provide details of any fire wall penetration for each type of wall construction, as outlined in the U.L. Building Materials Directory. Detail type and size of fire extinguisher to be provided. Base Fire Department should be contacted for further information. Provide the class and hour rating of fire doors on the door schedule. |
| <i>Mechanical Drawings:</i> | <ol style="list-style-type: none"> The location of sprinkler riser must be shown on the plumbing floor plan with a detail of the sprinkler riser also provided. (Note: Sprinkler piping layout is not shown) Show any CO₂ banks or clean agent tanks with a detail of the areas protected and a riser diagram. Show the location of smoke and fire dampers with a detail. Provide the physical layout of the fire pump and associated piping. Show, on the HVAC Drawings, any required duct mounted smoke detectors and intertie to shut down system when an alarm is triggered. Provide a fire stopping detail for penetrations of firewalls with reference. |

| | |
|------------------------------------|---|
| <p><i>Electrical Drawings:</i></p> | <ul style="list-style-type: none"> a. The existing base wide fire alarm system must be determined. If an exterior master box is required, the location must be shown. A detail of the master box pedestal must also be provided. b. All fire alarm and suppression devices, including control panel, manual pull stations, automatic detectors, extinguishing system pressure switches, and audible devices, shall be located on an electrical floor plan. c. A fire alarm riser and suppression system diagram showing the interconnection of all fire alarm equipment is required. Ensure the power supply and point of connection to base wide fire alarm is shown. (Note: Source of power to fire alarm control panel shall be taken prior to the main power disconnect.) d. Emergency lighting locations shall be provided on the electrical floor plan with a detail of each type of emergency light fixture provided. e. The fire alarm zone, suppression, and annunciation schedule shall be detailed. Complex fire alarm systems such as jet engine test cells and hush houses, aircraft hangars, etc. shall require a chart detailing a sequence of operations. f. Fire stop details of electrical penetrations of fire wall with a note referring to the appropriate architectural sheet for fire wall location. |
|------------------------------------|---|

| | |
|---|---|
| Table 11.5 (Continued) | Fire Protection Design 100% Submittal Requirements |
|---|---|

| Calculations | |
|---------------------|--|
| <i>General</i> | Provide corrections to comments on previously reviewed calculations. |

| Specifications | |
|-----------------------|---|
| <i>Specifications</i> | Outline specifications shall be developed per Appendix D. |

**Table 11.6 Electrical Design
100% Submittal Requirements**

| Drawings | |
|---|--|
| 100% Submittal: | <p>The 100% submission should include all drawings required for a 35% submittal plus all necessary detail sheets to fully present the scope of the electrical work required for the project.</p> <p><i>Drawings shall be fully coordinated with the other disciplines and the specifications.</i></p> |
| Existing Site and Demolition Plan: | <p>This drawing shall include all existing site information such as buildings, pavements and utilities that affect the demolition of the electrical portions of the project. The specifications should indicate the disposition of demolished materials and equipment. The limits of demolition must be clearly defined, i.e., if a portion of overhead line is to be removed, provide a detail showing how the remaining portion is to be terminated.</p> |
| Site Plan and Details: | <p>This drawing shall show all new and existing aboveground and underground features such as buildings, pavements and utilities that affect or interface with the electrical portions of the project. As a minimum the following information shall be shown:</p> <ol style="list-style-type: none"> Primary and secondary electrical lines Fire alarm and communications lines Transformer or substation (located by dimensions from the building or other prominent feature) Streets, parking area and other flood lighting All other exterior electrical equipment, such as M.G. sets, A/C units, etc. In congested areas a profile of duct lines may be required. Site details (light pole bases, transformers pads, trench details) |
| Lighting Plans and Details: | <p>These drawings shall show the building's full floor plan (first, second, etc.) with the location and number of lighting fixtures, including the type and size of wiring serving these fixtures. Provide details of all lighting fixtures used, including mounting height and support details. Emergency, exit, and security lighting shall be included where required. Seismic restraint of fixtures shall be shown where required.</p> |
| Power Plans and Details: | <p>These drawings shall show a building's full floor plan (first, second, etc.) as well as any large-scale plans necessary to prevent overcrowding. The power plans should show the location of receptacles and electrical equipment and the type, size and location of wiring required throughout the facility.</p> |
| Riser Diagrams: | <p>All of the following:</p> <ol style="list-style-type: none"> Power - Single Line Diagram Communications Plan Telephone Riser Diagram Computer network riser diagram and plan Other Riser Diagrams for Television, Paging, IDS, etc. Panel Schedules Switchboards and Motor Control Center Schedules Lighting Fixture Details |

Calculations

| | |
|----------|--|
| General: | Corrected to include all previous submittal review comments or a clear statement why the review comment was not complied with. |
|----------|--|

| | |
|---|---|
| Table 11.6 (Continued) | Electrical Design 100% Submittal Requirements |
| Specifications | |
| <i>Final Specifications:</i> | Outline specifications shall be developed per Appendix D. |

Chapter 12 CONSTRUCTION ADMINISTRATION SERVICES

A. General.

General requirements for Construction Administration (CA) Services are contained in this chapter. CA is divided into two classifications, Construction Contract Support Services (CCSS) and Field Support Services (FSS).

CCSS is construction support from the design team that is not performed on site. These services include but are not limited to project consultation, submittal review, review of value engineering proposals, creation of as-built or record drawings, review of O&M manuals and responding to field questions (DCRs).

FSS is construction support from the design team that is performed on site. These services include site visits/field consultations, construction inspection services, final inspection and on site DCR and/or as-built review.

B. Construction Contract Support Services (CCSS)

1. Office Consultation:

During construction, the A/E shall be available for office consultations as necessary to:

- a. Clarify the intent and interpretation of the plans and specifications
- b. Provide advice on questions that may arise in connection with the construction project, and
- c. Provide office consultations during negotiation of change orders to the construction contract.

This service is to be provided to the FD&CC Construction Project Manager (PM), not the construction contractor.

2. Submittal Review

The CCSS Statement of Work includes review and approval of the Contractor's submittals. FD&CC procedures to be followed for this work including flow chart and sample forms are contained in Appendix F.

Each copy of the submittal will be dated and stamped

"approved",
 "disapproved",
 "approved as noted," or
 "resubmit as noted,"

A/E disclaimers as to responsibility are unacceptable and all costs, impacts, delays relating to A/E improper disclaimers, whether experienced by the contractor, the Coast Guard and/or the

A/E will be borne by the A/E. "Disapproved" and "Resubmit as Noted" comments shall clearly state the reason for disapproval and what is required to bring the contractor's submittal into contractual compliance.

- a. Unless modified otherwise, the turnaround time for submittal processing is fourteen (14) days from the time the A/E receives the submittal until postmarked back to the Contractor. Submittals shall be tracked on form CM-05 (See Appendix F).
- b. The Contractor is required to review submittals for accuracy, completeness, and compliance with contract requirements and to indicate approval thereon as evidence of such coordination and review. NOTE: Check each submittal for this approval; the package may be returned for resubmission if it lacks this approval.
- c. The Contractor may submit an item that varies from the contract requirements. In this event the Contractor is to provide, in writing, a description of the variations, with the submittal. The A/E is to immediately notify the PM by telephone of the variation submitted, and proceed with the evaluations.
- d. A/E comments about enclosures shall be included on the transmittal letter, or attached, if additional space is needed. Notations shown directly on the drawings are acceptable, provided all enclosure sets include the notations.
- e. The A/E is required to approve, disapprove, or approve as noted each enclosure. The transmittal letter includes boxes for marking the appropriate recommendation. If comments have been made, check that box also. The A/E is required to sign and date the form at the bottom. The signature is to be that of a registered architect or registered engineer as appropriate for the item reviewed.

3. Field Questions (Design Clarification Requests)

The A/E is required, when requested by the PM, to provide technical responses to any Design Clarification Request (DCR). Provide a response within five (5) working days, from the time the A/E receives the DCR until postmarked/faxed back to the PM. If additional time is required due to the complexity of DCR, the PM is to be promptly notified by the A/E. The A/E is liable for any delays caused by the A/E's failure to comply with this and/or the approved schedule.

Additional information and sample DCR forms are contained in Appendix F.

4. Evaluation of Value Engineering Proposals.

When required by Appendix A, the A/E shall provide analyses, recommendations, and cost estimates on VECP's submitted by the construction contractor under the Value Engineering Incentive clause of the contract. The purpose of a VECP is to achieve savings in cost by adjusting the design so as to permit more economical methods and materials of construction and yet maintain the operational, functional and aesthetic integrity of the facility. Submit evaluations

in triplicate to the Contracting officer within ten (10) calendar days after authorization to proceed date.

5. Operations and Maintenance Manuals.

When required by the Scope of Work, the A/E shall prepare maintenance/operating manuals for the facility.

Division One, Section 01700, Contract Close-Out, establishes the requirements for contractor furnished Operation and Maintenance (O&M) Manuals. Sixty days prior to the anticipated date for Final Inspection the contractor is required to submit draft O&M Manuals. These are reviewed by the A/E and either approved or returned for correction.

6. Cost Estimates and Technical Descriptions.

The A/E shall prepare cost estimates and technical descriptions for proposed change orders and review and comment on the Construction Contractor's request for time and cost adjustments.

7. As-Built Drawings.

a. General Procedures

An as-built record of changes made during construction will be maintained by the construction contractor on two sets of the project drawings. At the completion of the project construction, one set of the Contractor's marked-up drawings will be forwarded to the A/E by the Contracting Officer. The A/E shall modify the CAD files by incorporating the Contractor's marked-up record of construction changes onto files to provide a record of the "as-built" conditions. The A/E shall also incorporate onto the files all modifications to the drawings issued by amendment or contract modifications. All questions regarding interpretation of the changes shown on the marked prints shall be referred to the PM. The A/E shall forward the files and the set of marked project drawings to the Contracting Officer within thirty (30) calendar days following receipt of the marked drawings. The submittal shall be prepared per the format identified in Appendix C.

b. Corrected Drawings

The drawings are corrected as follows. Deleted or superseded portions of the drawings shall be erased. The final "as-built" tracing shall show actual construction only, except where the original drawing contains portions marked "N.I.C." (not in contract), or where optional methods of construction are shown. No change need be made to those portions of the drawings marked "N.I.C." Optional methods of construction not used are to be crossed out and noted "NOT BUILT." All previous revision markings and symbols shall be removed from the body of the tracing. Revision notations in the revision block shall remain. When a drawing is modified to show "as-built" conditions, the notation "AS-BUILT CONDITIONS SHOWN" shall be entered in the topmost available line in the space provided. When no change is required on a tracing

to show "as built" conditions, then the notation "AS-BUILT" shall be entered in the topmost available line in the revision block with the A/E's initial and date in the space provided.

C. FIELD SUPPORT SERVICES

1. A/E Inspection Services.

When specifically required by Appendix "A", the A/E shall provide inspection services. Usually such services require that the A/E provide one or more full-time, qualified construction inspectors at the job site whose basic responsibility would be to keep the PM informed as to whether or not the construction meets contract requirements. The A/E shall have no authority to direct the construction contractor in any way regarding methods or procedures and shall not interfere with the contractor's methods of performance unless life or property is endangered. The Contracting Officer will be responsible for and execute signature upon all correspondence and specific direction to contractors.

2. Field Consultation During Construction.

The A/E shall provide:

- a. field consultation at the job site, as required by Appendix A.
- b. professional level personnel.
- c. the names, by discipline, of personnel who will be available for field consultations shortly after the award of the construction contract to the PM, with a copy to the EIC
- d. a brief Field Observation Report, with recommendations, immediately following such service, to the Contracting Officer with copies to the Project Manager and the EIC. The report shall include names of personnel who provided the service, the dates and the length of time onsite and the persons contracted.

3. Preconstruction Conferences.

Attended by A/E project architect/engineer, or agreed to representatives.

4. Partnering Meetings.

When required by Appendix A, the A/E shall participate in Partnering Sessions with the contractor.

5. Conducting the Final Inspection.

The A/E firm shall provide sufficient onsite expertise during this inspection to assure all concerned that major systems have been installed in accordance with the design. The A/E delineate, to FD&CC, the number of days of expertise to be provided in each of the following technical areas for the indicated construction project:

- A/E Project Engineer/Architect
- Civil Engineering Inspector
- Electrical Engineering Inspector
- Mechanical Engineering Inspector

The final inspection is typically broken down into two phases. Phase One is the "customer walk-through" and Phase Two is the technical inspection.

The Phase One inspection party will consist of the COR, PM, EIC (A/E), KO and Customer. The objectives of Phase One are to:

- Acquaint the customer with the product,
- Answer questions, and
- Acknowledge concerns of the customers.

The Phase Two inspection party will consist of the COR, PM, KO, EIC (A/E), and other members of the design team, as required. A representative of the servicing CEU may also attend. The objectives of Phase Two are to:

- accept all contract compliant work, and
- identify any non-compliant work.

6. Prepare Punchlists.

The results of the final inspection shall be documented in "Punchlists" by the COR, PM and A/E. Punchlist items document corrective work necessary for the facility to be accepted and must reflect specified level of quality for the work. Construction Form CM-22 is used to record punchlist items.

The following guideline should be followed:

- Complete separate lists for rooms, areas or systems
- Indicate precise location of the item ("NE corner room 210")
- Describe specific work to be done ("replace defective hardware")
- When possible separate work by trade

When the punchlists are developed, they shall be formally transmitted to the Contractor by the Contracting Officer along with a proposed date for Final Acceptance.

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FD&CC A/E Guide Appendices

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APPENDIX A

Acronyms and Abbreviations

| | |
|-----------------|---|
| A/E | Architect-Engineer |
| AC&I | Acquisition, Construction & Improvement |
| A/C | Air Conditioning |
| AFC | Allotment Fund Control |
| AGC | Association of General Contractors |
| ASTM | American Society of Testing Materials |
| ASHRAE | American Society of Heating, Refrigeration and Air Conditioning Engineers |
| ATL | Assistant Team Leader |
| ATON | Aids to Navigation |
| BEQ | Bachelor Enlisted Quarters |
| BMD | Director, Business Management Division |
| BOQ | Bachelor Officer Quarters |
| CASREP | Casualty Report |
| CABO | Cement Asbestos Board |
| CCR | Completed Construction Review |
| CAD | Computer Aided Design |
| CCSS | Construction Contract Support Services |
| CA | Contract Administration |
| CDR | Customer Design Review |
| CEDS | Civil Engineering Data System |
| CEU | Civil Engineering Unit |
| CFC | Chlorofluorocarbons |
| CFR | Code of Federal Regulations |
| CI | Construction Inspector (called COR in Guide) |
| CM | Construction Managers (PMs & CORs) |
| CMR | Contract Modification Request |
| CO | Commanding Officer, FDCC PACIFIC |
| CO ₂ | Carbon Dioxide |
| COMDT | Commandant, US Coast Guard |
| COMDTINST | Commandant Instruction |
| COR | Contracting Officer's Representative |
| CP&M | Chief of the Planning & Management Division |
| CPM | Critical Path Method |
| CPO | Chief Petty Officer |
| CSI | Construction Specification Institute |
| DCAA | Defense Contract Audit Agency |
| DCR | Design Clarification Request |
| DQR | Design Quality Review |
| DOD | Department of Defense |
| EC&R | Environmental Compliance & Restoration |
| EIC | Engineer-in-Charge (Design) |
| FAR | Federal Acquisition Regulations |
| FEMA | Federal Emergency Management Agency |
| FD&CC | Facilities Design & Construction Center |
| FFP | Firm Fixed Price |
| FSS | Field Support Services |
| FY | Fiscal Year |
| GAO | General Accounting Office |
| G-SEC | Civil Engineering Branch, CG HQ |
| GFE | Government Furnished Equipment |

APPENDIX A: ACRONYMS AND ABBREVIATIONS

| | |
|---------|---|
| HQ | Headquarters |
| HVAC | Heating Ventilating and Air Conditioning |
| HW | Hazardous Waste |
| IFB | Invitation for Bids |
| ISC | Integrated Support Center |
| ISSA | Inter-Service Support Agreement |
| JFTR | Joint Federal Travel Regulations |
| KO | Contracting Officer |
| KS | Contract Specialist |
| KVA | Kilo-volt amperes |
| LUFS | Large Unit Financial System |
| LORAN | Long Range Navigational System |
| MILSPEC | Military Specification |
| MILSTD | Military Standard |
| MOD | Modification |
| M.G. | Motor Generator |
| MP | Master Plan |
| MWR | Morale, Welfare & Recreation |
| NAFA | Non-Appropriated Funds Activity |
| N.I.C. | Not in Contract |
| NAVFAC | Naval Facilities Engineering Command |
| NEPA | National Environmental Policy Act (1969) |
| NFPA | National Fire Protection Association |
| NHPA | National Historic Preservation Act |
| NIST | National Institute of Standards and Testing |
| NLRB | National Labor Relations Board |
| NOAA | National Oceanic Atmospheric Administration |
| NPV | Net Present Value |
| NTE | Not-to-Exceed |
| NTP | Notice to Proceed |
| OE | Operating Expense |
| O&M | Operations and Maintenance |
| OSHA | Occupational Safety and Health Administration |
| OIC | Officer in Charge |
| P&M | Planning & Management Division |
| PCB | Polychlorinated Biphenyl |
| PM | Project Manager |
| PNM | Pre-Negotiation Memorandums |
| PreCon | Pre-Construction Meeting |
| QA | Quality Assurance |
| QAT | Quality Action Team |
| QC | Quality Control |
| RCRA | Resource Conservation and Recover Act (1976) |
| REA | Request for Equitable Adjustment |
| REHAB | Rehabilitation |
| RFI | Request for Information (DCR) |
| RFP | Request for Proposal |
| RIM | Repair, Improve, Maintain |
| SAR | Search and Rescue |
| SBA | Small Business Administration |
| SHPO | State Historic Preservation Officer |
| SITREP | Situation Report |
| SOPA | Senior Officer Present Afloat |
| SOW | Statement/Scope of Work |
| SSMR | Shore Station Maintenance Request |
| T&M | Time & Materials |

APPENDIX A: ACRONYMS AND ABBREVIATIONS

| | |
|-------|---|
| TAR | (Dept. of) Transportation Acquisition Regulations |
| TL | Team Leader |
| TQM | Total Quality Management |
| UAC | Uniform Annual Cost |
| UBC | Uniform Building Code |
| U.L. | Underwriters Laboratory |
| USC | US Code |
| USCG | US Coast Guard |
| USCGC | US Coast Guard Cutter |
| USCOE | US Corps of Engineers |
| UST | Underground Storage Tank |
| VE | Value Engineering |
| VECP | Value Engineering Change Proposals |
| VOC | Volatile Organic Compound |
| XD | Executive Director |
| XO | Executive Officer |

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Appendix B**DESIGN POLICIES AND BUILDING CODES****A. Introduction and Statement of Policy**

Design principles to be followed in the development of the Coast Guard buildings, structures, pavements, and utilities shall be as outlined in this section. Detailed and specific requirements are provided in the SOW and related sections of this manual. This section is restricted to describing general policies only.

Policies stated herein apply to new construction and rehabilitation projects. It is not the intent of this chapter to require existing facilities to be altered or improved to meet these principles and/or criteria beyond what is required in the project scope.

B. Guiding Principles – Shore Facilities Capital Asset Management (SFCAM) Strategy

All Coast Guard facilities are developed and managed through a strategy called the Shore Facilities Capital Asset Management (SFCAM) program. It is a top-down strategic initiative that integrates planning, investing, using, and divesting decisions to better align shore facilities with missions.

- a. Mission: To provide sustainable shore infrastructure that enables Coast Guard mission readiness.
- b. Vision: "Right Facility, Right Place, Right Time, Right Cost"
- c. Guiding Principles: Ensure the Best Value Shore Capability for the Coast Guard. All decisions and actions taken to manage shore facility capital assets will strive to achieve and maintain best value through a business case analysis that balances the following factors:

- | | |
|---|------------------------|
| ▪ Ease of Maintenance | ▪ Aesthetics |
| ▪ Ease of Construction | ▪ Location |
| ▪ Environmental Stewardship | ▪ Mission Essentiality |
| ▪ Energy Management | ▪ Functionality |
| ▪ Flexibility for Future Requirements | ▪ Size |
| ▪ Safety and Health | ▪ Affordability |
| ▪ Sensitivity to Community Concerns and | ▪ Ease of Disposal |
| ▪ Local Conditions | |

C. General Design Principles

- a. Functional and operational requirements shall be the primary considerations in design of all types of facilities.

- b. Designs shall provide both economical initial and life cycle cost consistent with the facility function, ease of maintenance, comfort of personnel, and satisfaction of operational requirements.
- c. Designs shall provide esthetically pleasing facilities, well-proportioned and simple lines, and careful choice of compatible colors and finishes.
- d. Designs shall incorporate a planned means for future building expansion when physical conditions allow or when called for in planning documents.
- e. Designs for utilities shall provide systems that are capable of being extended to meet future system expansion requirements. Consult with EIC to determine expansion requirements.
- f. Designs shall provide painting systems in accordance with the Coast Guard Coatings and Color Manual (COMDTINST.M10360.3).
- g. All civil, landscaping, architectural, structural, mechanical, electrical and communications designs shall comply with their relative sections in this A/E Guide.
- h. Drawing scale shall be appropriate for the item being illustrated. Each drawing shall clearly present the intended information, being neither too large nor too small.
- i. Designs shall minimize the maintenance burden on the user. Maintenance-free materials and easy to operate and maintain systems shall be used.

D. Applicable Building Codes

Unless otherwise indicated in the SOW, the codes listed in Table B.1 shall be followed for A/E designed Coast Guard shore facilities. The design shall be in conformance with the latest edition of the code in effect at the time of award of the A/E contract.

| Table B.1 | |
|------------|--|
| Discipline | Code |
| All | International Building Code, 2000 Addition (where adopted) Uniform Building Code, 1997 Addition (elsewhere) |
| All | NFPA 101 Life Safety Code, 1994 Addition |
| Electrical | National Electric Code (NFPA #70), 1999 Addition |
| Mechanical | Uniform Mechanical Code, 1999 Addition |
| Plumbing | Uniform Plumbing Code, 1991 Addition |

In cases of life safety conflicts, the NFPA Codes will supercede the requirements of the model building codes.

Major Exceptions:

1. Earthquake Protection. In earthquake zones #3 and higher, all fuel gas building service lines shall have earthquake shut-off valves installed before building entry.
2. Aluminum Electrical Conductors. The use of aluminum conductors in building interior power distribution wiring is prohibited.
3. Facilities and Occupancies. The requirements covered in the section entitled "Special Facility and Occupancy Requirements" identified in paragraph D of this appendix shall be in addition to and/or take precedence over any conflicting requirements imposed by the model building code adopted by the local authority having jurisdiction.

1. Local Codes and Standards.

Adherence to requirements of local codes which are more restrictive than UBC should be evaluated and followed where it is considered to be in the best interest of the Government.

2. Department of Defense Facilities.

Where a USCG facility is a tenant on a DOD site, the USCG may be required to be in conformance with DOD design standards which conflict with the National Model Building Code. The DOD standards shall govern.

3. Locations Outside the United States.

Coast Guard shore facility designs that are to be built outside the United States shall be in conformance with the International Building Code, except where the host nation uses a code with more restrictive requirements the host nation's code will then govern.

4. Exceptions to Policy.

Exceptions to the building code policies stated in this section may be granted on a case-by-case basis. Exceptions will only be granted where sufficient justification exists. Requested exceptions, with justifications, should be submitted in writing to the KO.

E. Special Facilities and Occupancy Requirements

The following requirements take precedence over those imposed by the National Model Building Code and any other code in effect for the location.

- a. Bachelor Enlisted and Officer Quarters. Automatic smoke detection and alarm systems shall be installed in all bachelor enlisted and officer quarters. Automatic detection and alarm systems, and automatic extinguishing systems shall protect all facilities that include berthing areas.
- b. Family Housing. Fire protection and life safety criteria shall conform to the current edition of the Council of American Building Officials (CABO) "One- and Two-Family Dwelling Code."
- c. Aircraft Hangars. All new aircraft hangars shall be equipped with a foam-water deluge system in the main hangar area. Design system in accordance with NFPA Standard #409, Aircraft Hangar Fire Protection. Hangar lean-to areas shall be separated from the main hangar area by one-hour, fire-rated walls. Provide curbs or ramps and drains at all openings that penetrate the separating wall. Automatic sprinkler systems shall be provided in all lean-to areas. A containment system for the foam-water deluge system shall be provided to prevent the deluge from escaping the hangar.
- d. Electronic Equipment Installations. New facilities having electronic equipment installations shall be designed with fire-resistive construction as a minimum construction type. Rooms housing electronic equipment shall be separated from other occupancies by fire-rated walls or partitions. Standard wet-pipe or pre-action automatic sprinkler systems shall be provided in electronic equipment areas where combustible materials, including cards, paper, and plastics are processed or stored (excluding cards, paper, disks and tapes within machines). In areas such as electronic shops and avionics shops, automatic power shutdowns shall be installed to cut power to work benches in the event the sprinkler systems are activated.

- e. Major Electronic/Computer Installations. Facilities containing major computer or electronics equipment installations shall conform to NFPA 75 for construction and fire protection requirements.
- f. Remote Operating System (ROS). For LORAN stations utilizing solid-state transmitters equipped with self-contained clean agent suppression systems, the transmitter room, operations room, and other work spaces shall be protected by dry pipe sprinkler systems in lieu of room-flooding clean agent systems. In the event water availability is severely limited, an economic analysis shall be performed to select the building protection system. Activation of the building fire protection system shall shut down all power to the transmitter and operations room, as well as all heating, cooling, and ventilation systems. Building spaces shall be monitored using ionization and photoelectric detectors. The system shall be designed to alarm locally and remotely, as required.

F. Special Design Considerations

- a. Operational Mission Requirements. The operational mission requirements of a facility have a higher priority than any other requirements of the design. The facility must be designed to fully meet the requirements of the mission.
- b. Sizing Standards. All spaces shall be sized in accordance with the Space Component Standards Manual, COMDTINST MI1012.7.
- c. Occupational Safety and Health Act and 29CFR OSHA Regulations, Parts 1900, etc. Designs and construction methods for all new and rehabilitated facilities, including all site layouts, buildings and Government furnished equipment, shall comply with the requirements of appropriate parts of the Occupational Safety and Health Act of 1970.
- d. Access for the Physically Handicapped. Coast Guard shore facilities shall be designed and constructed to provide access to the physically handicapped in accordance with Chapter 2 entitled "BARRIER FREE ACCESS" of COMDTINST MI1000.11A and Uniform Federal Accessibility Standards. The Americans With Disabilities Act (ADA) does not apply to federal facilities.
- e. Value Engineering. Value Engineering is considered an integral part of the project design. See Chapter 14 entitled "VALUE ENGINEERING" of COMDTINST.MI1000. 11A for Coast Guard policy on Value Engineering.
- f. Physical Security . For a description of security requirements, see the Coast Guard Physical Security Program, COMDTINST M5530.1B, and the Navy Design Manual, DM-13, Physical Security.
- g. Potable Water Supply and Wastewater Treatment. Shall be in accordance with COMDTINST MI1200.2, "Water Supply and Wastewater Disposal Manual."

- h. Energy-Related Facilities. In addition to the main facility meters provided by the gas and/or electric company, additional individual metering shall be provided as follows:
- (a) Shore ties for all vessels having OPFAC numbers.
 - (b) All new buildings.
 - (c) Individual family housing units.
 - (d) NAFA facilities.
- i. Female Personnel Considerations. Designs for shore facilities shall include considerations for their use and/or occupancy by female personnel. These considerations should include:
- 1. Berthing. In the calculation of the number of berthing modules required to house the personnel authorized permanent-party berthing at a unit, one additional module shall be added to the total to ensure male/female separation. Facilities, such as designated UPH buildings or where the expected occupancy is 50 or more are exempt from this requirement.
 - 2. Toilets. In cases where the total number of expected users does not exceed 15, a single uni-sex, 2-fixture toilet, with a lockable door, may be provided. All other facilities requiring public/staff/shop/crew toilets shall provide separate toilets for female use.
 - 3. Shower and/or Locker Facilities. Where facilities require shower, locker, or wetrooms, separate facilities shall always be provided for male and female personnel.
- j. Flood-Level Elevation. All shore facilities shall be designed so that finish ground floors are above the 100 year flood elevation. Base design on current FEMA maps for the area and local historical high-water data.
- k. Asbestos. Asbestos and materials that contain asbestos shall not be used in new construction, rehabilitation or maintenance of shore facilities. For asbestos removal, exposure and disposal regulations and requirements, see the "Asbestos" section of COMDTINST M16478. 1, "Hazardous Waste Management Manual."
- l. Service Life. Coast Guard shore facilities may be divided into two construction classes which are based on expected service life. They are: (1) Permanent, and (2) Temporary.
- 1. Permanent. Permanent class construction will incorporate the quantity of materials, equipment, details, and methods of construction to produce facility that will serve a specific purpose for at least 30 years. Permanent buildings should be designed to include a high degree of internal flexibility, as well as a possibility for expansion so those new and/or revised mission requirements

can be accommodated. Permanent class buildings will account for the majority of shore facilities in the Coast Guard

2. Temporary. Temporary class construction will incorporate the quality of materials, equipment, details, and methods of construction to produce a building or facility suitable to provide minimum accommodations at low first cost to serve a specific purpose for five years or less. Temporary buildings should only be built when it appears that the mission to be supported will be of a short duration, or when it is required to house special equipment that will become obsolete within a few years.
- m. Energy Conservation. For energy conservation requirements applicable to shore facility design, see COMDTINST M11000.7, Civil Engineering Facilities Energy Manual."
 - n. Underground Fuel Storage. Underground storage of fuel is not normally permitted on Coast Guard facilities. Should the project require use of underground fuel storage, the system shall comply with the Resource Conservation Recovery Act (RCRA).
 - o. Preservation and Restoration of Historical Shore Facilities. Preservation of historical facilities shall be in accordance with Section 106 of the National Historic Preservation Act (36 CFR Part 800) and the Civil Engineering Technical Report CG-ECV-2-82, guide for restoring and preserving old and historical properties.
 - p. Pollution Control: All applicable pollution control standards promulgated by Federal, State and local agencies in implementing environmental legislation; Clean Water Act; Resource Conservation Recovery Act; Safe Drinking Water Act; Noise Control Act; Toxic Substances Control Act; Marine Protection and Sanctuaries Act; Federal Insecticide, Fungicide and Rodenticide Act; are applicable. "Applicable pollution control standards" are the same substantive, procedural, and other requirements that would apply to the private and industrial sectors. Facilities shall be designed to comply with the most stringent Federal, State or local standards.
 - q. Stormwater Management: Stormwater management shall be incorporated into all applicable designs so as to eliminate or reduce the discharge of pollutants from impervious surfaces, i.e. rooftops, and parking areas. Applicable state stormwater management guidelines shall be followed.

G. Design References and Standards

Table B.2 lists applicable design references and standards by design discipline.

Local Requirements: The majority of Coast Guard facilities are on federal property and are therefore exempt from local building codes. However, all construction shall conform to local codes and utility system installations shall conform to local utility standards unless other directed by the EIC.

| Table B.2 Design References and Standards | |
|--|---|
| Civil Design | |
| Storm Sewer System and Surface Drainage | Per locally accepted practices |
| Water Systems | NAVFAC Military Handbook 1005/7A Water Supply Systems, 01 September 1999 National Fire Protection Association (NFPA). American Public Works Association (APWA). |
| Sanitary Sewer Systems | NAVFAC DM 5.8 Pollution Control Systems American Public Works Association (APWA). |
| Pavements | American Public Works Association (APWA). The Asphalt Institute Publications. Principles of Pavement Design - John Wiley & Sons, Inc., New York. Applicable local and state Department of Transportation Design Manuals |
| Architecture | |
| All facilities | Shore Facilities Project Development Manual (SFPDM) - COMDTINST. M11010. 14. Space Component Standards – COMDTINST M11012.7 Multi-Mission Station Design Guide Housing - Chapter 11 of COMDTINST M11000.11A. |
| Structural | |
| Marine Structures (Piers, Wharves, Wavebreaks, etc) | "Standard Specifications for Highway Bridges" (AASHTO) "AASHTO LRFD Bridge Design Specifications" (AASHTO) "Shore Protection Manual" - Army Corp of Engineers NAVFAC Military Handbook 1025/1 Piers & Wharfs NAVFAC Design Manual 26.4 & 26.5 Fixed and Fleet Mooring |
| Bridges (Vehicular, Bicycle, and Pedestrian) | Design using the more stringent of the state's department of transportation criteria or the "Standard Specifications for Highway Bridges" or "AASHTO LRFD Bridge Design Specifications" by the American Association of State Highway and Transportation Officials (AASHTO). |
| Antenna Towers and Antenna Supporting Structures | Design using national building code as approved and modified by the local building official or ANSI EIA/TIA 222-2E, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, whichever is more stringent. |
| Mechanical | |
| Plumbing Systems | NAVFAC DM-3.01 Plumbing Systems NAVFAC Military Handbook 1003/1(YD), Department of Defense Handbook, Plumbing, 15 February 2000 |
| HVAC | ASHRAE Guide and Data Book ASHRAE Guide, Industrial Ventilation Manual NAVFAC Military Handbook 1003/3, Heating, Ventilating, Air Conditioning and Dehumidifying Systems, 15 November 1995 NAVFAC Military HB 1003/17C, Industrial Ventilation Systems, 29 Feb 1996 |

APPENDIX B: DESIGN POLICIES AND BUILDING CODES

| | |
|------------------------|---|
| Energy | NAVFAC Military Handbook 1003/13A, Solar Heating of Building and Domestic Hot Water, 14 June 1985 NAVFAC Military Handbook 1003/19, Design Procedures for Passive Solar Buildings, 03 May 1998 |
| Fire Protection | |
| Fire Protection | NAVFAC Military Handbook 1008C, Fire Protection for Facilities Engineering, Design and Construction, 10 June 1997 |
| Electrical | |
| | NAVFAC Military Handbook 1004/1, Electrical Engineering Preliminary Design Considerations, 30 May 1988 NAVFAC Military Handbook 1004/2A, Power Distribution Systems, 15 January 1992 |
| Communications | |
| Voice/Data Wiring | Electronics & Telecommunications installation: COMDTINST M10550.25 ANSI/EIA/TIA-568A Commercial Building Telecommunications Wiring Standard ANSI/EIA/TIA-569A Commercial Building Standard for Telecommunications Pathways and Spaces ANSI/EIA/TIA-606 Administration Standard for the Telecommunications Infrastructure of Commercial Buildings ANSI/EIA/TIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications |

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Appendix C. DOCUMENTATION STANDARDS

A. General

The standards for data format standards and naming contained in this appendix shall be used in preparation of the contract drawings and other submitted documents. These standards generally describe various technical features and requirements of drawings and specific information that must be included on the drawings but is not intended to be a complete list of all features. All work done for the A-E by sub-consultants is regarded as work done by the A-E. Work that does not conform to this standard is the responsibility of the A-E.

B. Electronic Media

B.1 Electronic Media: Work may be submitted on the following electronic media (given in order of USCG preference): CD-ROM disc in JOLIET or ISO 9660 format and 1.44MB (3.5") disk. The format of the magnetic disks shall be MS-DOS Extended FAT. FAT-32 format disks are not acceptable. In order to speed contract execution, interim submissions of electronic deliverables via electronic mail may be directed by the Contracting Officer. In all cases submission of final deliverables shall be on physical media.

B.1.1 Disks shall be submitted with the final hard copy of the drawings and specifications or other documents. No disk shall contain documents from more than one USCG project.

B.1.2 If 3.5" floppy disks are used, drawing files, specification files, photo files, and other files shall be segregated by submitting them on separate disks. In the case of CD-ROM media, all files shall be contained on the same disk and shall be stored in different folders (i.e. folders named 'drawings' for drawings, 'specifications' for specifications, 'photos' for photos, etc.). CD-ROM media will be provided in a jewel case, properly marked.

B.1.3 Physical media shall not contain compressed or "zipped" files.

B.1.4 If directed by the Contracting Officer, files shall be delivered via email attachment. Emailed files shall be "zipped" into compressed archive files using the PKWare™ .zip file format. No single email may exceed 2 MB in size. If the submission is greater than 2 MB, then it shall be broken into multiple 2MB .zip files and each .zip file shall be mailed in separate a email message. The primary email message shall contain a manifest of the delivered files including all information described in paragraph A.

B.1.5 Project drawings shall be submitted in a single three ring binder consisting of:

- a. Exterior cover with Project Name & Location, Project Number, Date of Submittal, A-E Name, Level of Drawing (PPR-B, Schematic Design, Final Design, Record Conditions, etc.).
- b. Binder Edge label showing Project Name, Location and Date.
- c. CD-ROM containing individual drawings, labeled per B.1.5.a. above.

- d. 8 ½" x 11" print of each drawing contained on CD-ROM.

NOTE: A-E is responsible for including the drawings done by their sub-contractors. Incomplete submittals shall be returned at the A-E expense for correction.

B.2 Media Labels: All disks submitted to the Coast Guard will be marked with a complete project description, project number, all file names (only on floppy), date of the submission, submittal percentage, disk format capacity.

B.3 Electronic File Size: All files delivered shall be of a reasonable size. Reasonable size means the size that a file would be if a professional computer user prepared the document applying high standards of workmanship and care. In most cases document files of excessive size are caused by improperly inserted bitmap images or inserting bitmap images with excessive dots per inch (dpi) ratios. Drawing files of excessive size are generally caused by incorrect hatch pattern scaling or by a drawing not being fully purged and then 'wblocked'. Deliverables containing files of unreasonable size will be rejected. To define expected reasonable size each file type covered in this specification is given a normal file size and a maximum file size limit in megabytes (MB). The USCG expects that file sizes will be near normal size in most cases. Files of a size near the maximum size are considered an extreme case and are due to a special situation that cannot be mitigated. In any case, deliverables with a file of a size greater than the given maximum file size limit will be rejected unless prior approval is obtained from the Contracting Officer.

B.4 Computer Viruses. All delivered files shall be free from known computer viruses. Due diligence must be exercised. Deliverables containing viruses shall be rejected. Damage caused to USCG equipment by received products will be the responsibility of the A-E. Cost of repair or replacement may be levied at the discretion of the Contracting Officer.

B.5 Copyrighted Material. No delivered files shall contain copyrighted material. Material in delivered files shall be in the public domain and be freely usable and copy-able without threat of copyright infringement. If the Contracting Officer specifically directs that copyrighted materials be delivered electronically, the contractor shall 1) pay all license fees for the copies delivered, 2) clearly mark the materials as copyrighted, 3) indicate on the delivery media that it contains copyrighted material, and 4) mark the materials with the limitations of use.

B.6 Rejection of Deliverables. As stated in Paragraph A, deliverables not meeting the requirements of this specification section will be rejected. The contractor will be required to correct and resubmit deliverables that meet the requirements of this specification section. Rejection may be in whole or in part at the discretion of the Contracting Officer. The Contracting Officer will provide a punch list of items requiring correction.

B.7 Government-Furnished Materials. It is the Government's intention to provide electronic materials to the Contractor which meet the specifications stated herein. The Government, however, reserves the right to furnish electronic materials to the Contractor which are not in conformance with these specification if it is in the best interest of the Government. The Contractor shall bring any Government-furnished materials into compliance prior to submitting them as contractually required electronic deliverables. Any effort by the Contractor to bring Government-furnished materials into

compliance, must be included in the bid or fee proposal and shown as a separate line item titled 'GFM Compliance Effort'. The Government will notify the Contractor that it intends to furnish materials not meeting this specification at the time the IFB or RFP is issued.

C. CAD Drawing Requirements.

C.1 General.

All drawings shall be prepared in accordance with this guide and the National CAD Standard (NCS) published by the National Institute of Building Sciences. The current version of the published standard can be obtained from the NIBS web site: <http://www.nibs.org>. The standard published by the Tri-Services CADD/GIS Technology Center (complies with the National CAD Standard) can be obtained at: <http://tsc.wes.army.mil/products/standards/aec/intro.asp>

The FD&CC Pacific web site, www.uscg.mil/mlcpac/fdccp/contracting/index.html, contains documentation standards, instructions and downloadable files for providing documents consistent with our practices and procedures. **Drawing files that do not comply with these published standards will be returned for correction at the A-E's expense, see Paragraph A.** Contact the project Contracting Officer for questions and clarifications.

The A/E shall show all the information necessary to be consistent with those generally recognized by the construction trades and consistent with the representations as found in Architectural Graphic Standards by Ramsey Sleeper publishers.

C.2 CAD Standards.

All drawing for Schematic design phases, and beyond must be produced using this standard in conjunction with AutoCAD™ Release 2002. FD&CC Pacific cannot accept object enabled drawings at this time. Drawings that were created architectural, civil, mechanical or other discipline specific products MUST not include imbedded objects.

Drawing files may be submitted for routine standards review at any time at the Governments convenience. Contact the EIC for schedule.

The A-E shall be responsible for the drawing format and documentation submittal of all project sub-consultants.

C.2.1 External References. No external references (XREFs) may be included in the completed drawing. Prior to submission all XREFs shall be bound to each drawing file using the 'insert' method.

C.2.2 Attached Images. Drawings which have image files attached shall be delivered with all the attached images. Attached image files shall be named with the drawing name as a prefix and image number as a suffix (e.g. 12X34567_A1_001.tif, 12X34567_A1_002.jpg, 12X34567_A1_003.gif, etc). See section paragraph 1.2.3 below for drawing file naming

conventions. Attached images shall not have the folder path stored but shall reference the images out of the same folder as the drawing file. Valid image formats and resolutions are shown below in paragraph C.2.11.

C.2.3 Lineweights. Color, Lineweight, and Plot Style shall be assigned to drawing elements 'BYLAYER' or 'BYELEMENT'. Using colors to assign lineweights at plot time is not acceptable unless otherwise approved by the Contracting Officer. See paragraph 1.2.11 for using color to assign 'halftone' at plot time. Only the following lineweights, which follow according to the National CAD Standard version 2.0 and the Tri-Services CAD Standard, will be used.

| Lineweight Description | Pen Width (in.) | Pen Width (mm.) |
|---------------------------|--------------------|--------------------|
| Fine | 0.007 | 0.18 |
| Thin | 0.010 | 0.25 |
| Medium | 0.014 | 0.35 |
| Wide | 0.020 | 0.50 |
| Extra Wide | 0.028 | 0.70 |
| Option 1 | 0.040 | 1.00 |
| Option 2 | 0.055 | 1.40 |
| Option 3 | 0.079 | 2.00 |

C.2.4 Line types: Only line types as defined by the National CAD Standard version 2.0 or later shall be used. The LTSCALE factor shall be set to one (1). The PSLTSCALE factor shall be set to one (1). This allows the line type scale to be set automatically by the paper space viewport scale. **Screen color 8 is assigned for use as a halftone lineweight.**

C.2.5 Layering. The number of layers shall be kept to a practical minimum. More than 30 layers are considered excessive in a completed drawing. Layer names shall adhere to the National CAD Standard version 2.0 or later. Short form is preferred, long form will be accepted.

C.2.6 Drawing Entities. All completed drawings shall be fully purged of unused styles, layers, blocks, etc. All completed drawings shall be 'WBLOCKed' to a new file to remove any and all unused data and to insure a minimum file size.

C.2.7 Text. The primary font shall be "ROMANS". The TrueType™ font "ARIAL" may be used for cover sheet text, detail, section, elevation and plan titles. No third party or other Windows™ fonts are acceptable. Drawings delivered with fonts other than those described herein will be rejected

- a. Minimum actual plotted text size on full size sheets shall be 1/10" (.10") in order for the text to be readable on half size drawings. Minimum text size for dimensions shall be 1/10".
- b. Text shall be set to either a thin or medium lineweight. See paragraph C.2.3 above for lineweight designations.

C.2.8 Third Party Applications. All files shall be stripped of 3rd party application data (including proxy images). Drawings that display error messages on USCG computers about missing applications will be rejected. No third party text fonts (.shx) or linetypes (.lin) shall be accepted.

C.2.9 File Conversion. Files converted from other formats shall be checked by the contractor or A/E using the AutoCAD program for suitability and completeness prior to delivery to the USCG.

C.2.10 Submittals. Only one drawing shall be in each drawing file. This restriction can be excepted in the case of floor, site, or other plans that span multiple sheets. In this case the full floor or site plan shall reside in model space and each drawing title block shall be in a separate layout (paper) space.

Submitted drawings shall be final and an exact representation of the submitted hardcopy drawing. When the file is opened up, no manipulations shall be required to plot the finished drawing.

Submittals of project drawings shall meet section B.1.5.

C.2.11 Revisions. Revisions made to approved drawings shall be noted using revision marks, revision clouds, and heavy lines as defined in the National CAD Standard version 2.0 or later. In general changes shall be indicated by crossing out the original drawing elements and drawing in the change. For each revision the issue block in the title block shall record the revision mark number, revision date, revision description, and reviser initials. Revisions shall also record handwritten USCG approval signatures, initials, approval signature date, and any reviser initials in the title block or issue block using block lettering. Revisions shall only be made to a copy of the original or previously revised electronic CAD file. The revised file shall be named using the original file name appended with "_rev1", "_rev2", etc to indicate the number of the revision (e.g. 13X02123_A5_rev1.dwg). Due care shall be taken to insure that no changes are made to the electronic files between the original or revised issue and the next revision. No revisions shall be made to hardcopy drawings. Revised drawings shall be initialed in the issue block in blue indelible ink by a registered professional.

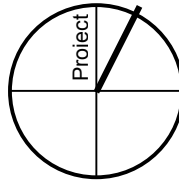
C.2.12 Record (As-built) drawings. If required by contract or task order, Record (as-built) changes shall be recorded to the drawings. Redline drawings, as recorded by the construction contractor, will be provided by the USCG. Record changes shall be recorded as a standard revision with the following exceptions: the issue block description shall be titled "RECORD"; the drawing shall be marked in a prominent place near the lower right of the drawing with the word "RECORD" in ½" high "ROMANS" font with an bold lineweight; all sheets in the drawing set will be marked as above along with the issue block entry to record the date of the Record issue (even if no changes are required to the sheet). The Record file shall be named using the original file name appended with "_record" (e.g. 13X02123_A5_record.dwg). Any Record drawing production effort by the contractor shall be included in the bid or fee proposal as a separate line item titled 'As Built Drawing Production Effort'.

C.2.13 Professional Registration Seal: In order to accommodate creation of drawing revisions and Record using solely electronic CAD techniques the professional registration seal sans signature of the original drawing approver(s) shall be recorded in the electronic CAD file.

C.2.14 Special Symbols.

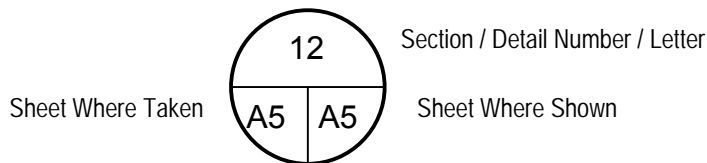
C.2.14.1 North Arrows.

Use a cross hair type north arrow showing both compass north and project north. Use the following example. Each plan view must include a north arrow (Site & Vicinity plans, Floor Plans, Roof Plans, etc.).



C.2.14.2 Section & Detail References.

Section and detail reference markers shall be a three-part symbol as shown below. Sections are generally named with a letter, details with a number.



C.2.15 Model Space/Paper Space: All submitted drawings shall be drawn to actual size and shall reside in AutoCAD™ 'model space'. All title blocks, sheet borders, general notes, and other general annotation will reside in "layout space" (paper space). Drawings that are schematic in nature or state and vicinity maps may also reside in paper space.

C.2.16 Plotting. Plotting will done using the AutoCAD™ "Color –Dependent Plot Style Table", (.ctb) format. The FD&CC plot table (CEC.ctb) can be downloaded from the FD&CC web site, www.uscg.mil/mlcpac/fdccp/contracting/index.html. Drawings that are not able to be plotted using this process will be returned for correction at the A-E's expense.

C.2.17 Scale: All site plans, plot plans, floor plans, contour maps and other drawings of this type shall be drawn to actual size in model space. The actual drawing scale will be determined by an exact setting of the paper space viewport scale. Use standard engineering/architectural scales in all cases.

1. The exception to the 'standard scale' rule is state and vicinity maps.
2. Site and plot plans shall be plotted at the largest engineering scale possible to fit on the desired sheet.
3. Each sheet shall contain a graphic scale for each different scale used on that sheet.

4. If any portion of a drawing is not drawn to scale, that drawing shall be marked 'NOT TO SCALE'.

C.2.18 Drawing File Names.

Use the following file naming convention for all submitted drawings:

Project Number _ Sheet Number

Examples: 13X02123_A5.dwg
13X02123_A12.dwg

Use underscores to separate project number from sheet number. Dashes, dots, tildes & etc. will not be accepted.

C.2.19 Sheet Borders & Title Blocks. The use of USCG sheet borders & title blocks is mandatory. Borders (ANSI A through ANSI E sizes) can be accessed through the FD&CC Pacific web site. FD&CC Pacific uses title block attributes to populate a corporate drawing database; the information must be correct and consistent. DO NOT "RENAME" OR "EXPLODE" THE SHEET BORDER, this will cause the attribute information to be corrupted.

Contact the project EIC for the correct title block format & information. Files and instructions can be found on the FD&CC Pacific Web site www.uscg.mil/mlcpac/fdccp/contracting/index.html.

C.2.20 Sheet Naming. Use only the single character discipline designator as shown below. Do not use dashes between the discipline identifier and the sheet number.



Note: For large projects, an alternative naming system may be used to easily insert additional sheets if necessary. Contact the Contracting Officer for more information.

C.3 Specifications

C.3.1 General. Specifications shall be organized according to the CSI 16 division specification classification system. Specifications shall be delivered as editable Microsoft Word 2000 binary format document (.doc) files.

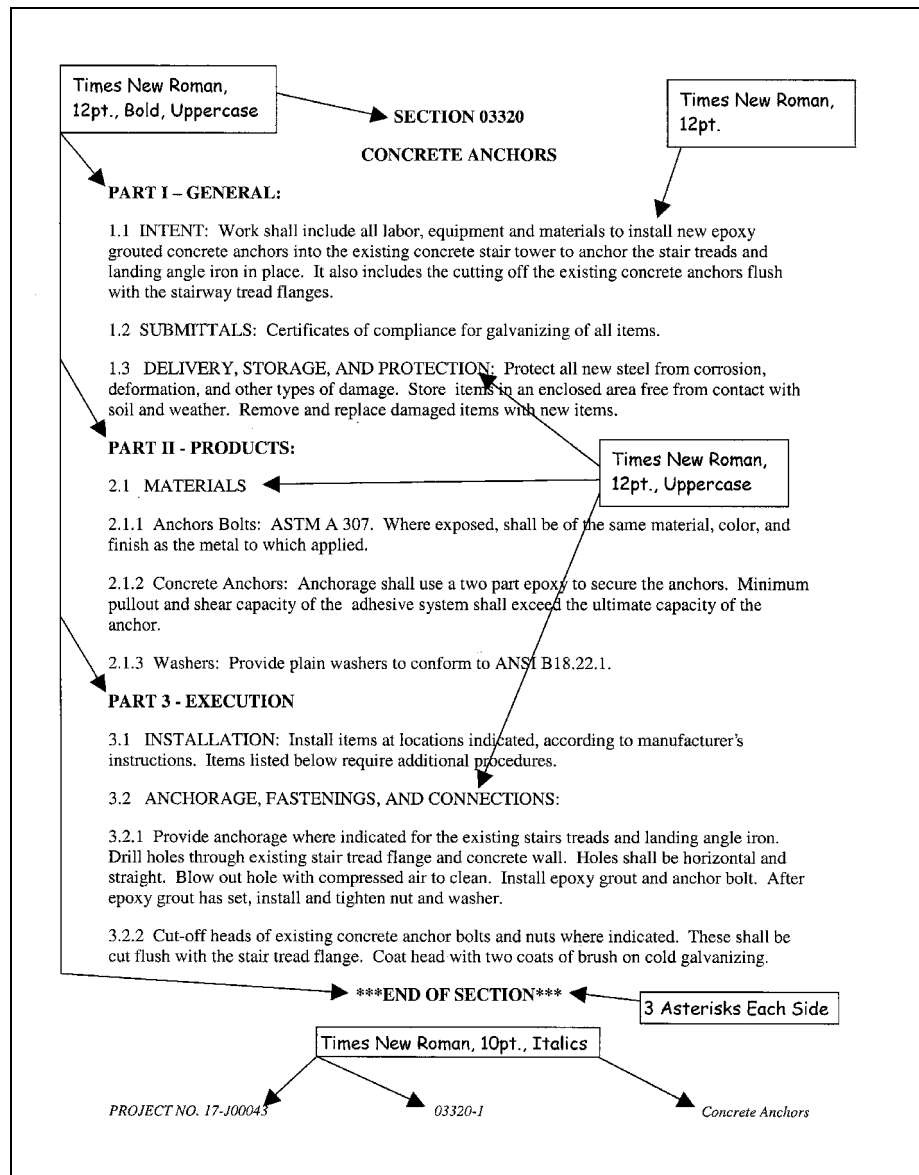
C.3.2 Provided Materials. Division 1 -General Requirements: Except as otherwise noted the Division 1 specifications will be supplied by the Coast Guard, except that the contractor shall supply section number 01010 titled "Scope of Work", section number 01012 titled "Special Requirements", and a completed and accurate "Submittal Status Log." The Division 1

specification sections will be provided by the Contracting Officer. The contractor shall ensure that provided materials meet format standards.

C.3.3 Organization and Naming. Specifications shall be organized and named as individual files. Provide documents in the following format, <Project number> _ <specification number>

Ex. 13X02123_09250.doc
13X02123_index.doc

C.3.4 Text Sizes, Style & Footer. Each page of every specification sections shall incorporate consistent text fonts and text sizes as seen below. A footer shall be used on every page following the example below. The footer will include project number, specification section & page number and specification name.



C.3 Reports.

C.3.1 General. Reports shall be delivered as editable Microsoft Word 2000 binary format document (.doc) files and as Adobe .pdf files.

C.3.2 File Naming. Reports shall be named in the following format: *<project number> _ <title>*

ex. 17X12345_Kodiak Cargo Pier Investigation.doc

ex. 11F45678_AIRSTA San Francisco Hazmat Survey.pdf

Use MS Windows™ file naming rules subject to the following limitations: When naming a file use title case and spaces. Do not use periods for abbreviations, acronyms, or initials. Keep file names (excluding extensions) 40 characters or less in length.

C.3.3 File Organization: Files shall be organized in a logical fashion such as by phase, chapter, and/or other distinct division, or as specifically required by the Contracting Officer. The number of files shall be kept to a reasonable minimum while keeping the file sizes within required limits. The complete report may be consolidated into a PDF file but the source .doc files are required to be delivered. If the consolidated report PDF files contain images, they shall be 'Print Optimized' using Adobe Distiller.

C.3.4 Digital Images. Images shall be inserted wholly into the report file and not attached. Prior to insertion, bitmap images shall be down sampled to a resolution suitable for the size of the image in the report. Suitability of inserted image files is governed by the requirements of paragraph 1.5. Images shall be inserted using the 'Insert-Picture-From File..' method.

C.3.5 Index Tabs and Binding. Reports shall be tabbed with labeled index tabs at major division points as described in paragraph C.3.3. Index tabs shall be durable paper with plastic laminate at wear and stress points or other Contracting Officer approved system. Reports shall be bound in comb bindings, 3 ring binders, or other Contracting Officer approved methods. In the case where the report front and back covers are exposed paper the paper shall be laminated in plastic on both sides of the paper.

C.3.6 Quality. Reports shall be professionally prepared and use high quality materials and techniques.

C.3.7 Use of Color and Copies. Use color is encouraged if it enhances the readability and quality of the information presented. Use color schemes the have high contrast which can be photocopied in black and white and retain readability and information integrity. Original report copies shall be in color and subsequent copies may be in black and white.

D. File Naming Standards

D.1 General

All electronic files produced under this contract will be named with in the following convention.

Project Number _ file description

Examples: 13X02123_costs.xls
 13X02123_boringlog.doc
 13X02123_sitephoto.jpg
 13X02123_materials.pdf

Use underscore ONLY to separate project number from sheet number. Dashes, dots, tildes & etc. will not be accepted.

E. Acceptable File Formats

The following formats are acceptable for submitted files under this contract. Other file types may be permitted with written permission from the project Contracting Officer.

- a. MS Word .DOC = General correspondence, specifications, meeting minutes, etc.
- b. MS Excel .XLS = Spreadsheets.
- c. MS Powerpoint .PPT = Presentations.
- d. MS Project .MPP = Project scheduling.
- e. MS Access .MDB = Database.
- f. Adobe Acrobat .PDF = Vendor / product information, code & standards (ANSI, ASTM, SMACMA, etc) information.
- g. AutoCAD .DWG = Drawings.
- h. AutoCAD .DWF = Drawing viewer.
- i. .JPG = Photos.
- j. .TIF = Scanned images.
- k. .ZIP = File compression & consolidation (use the Zip executable .EXE for large number of files).

Appendix D SPECIFICATIONS

A. General

The A/E shall be responsible for preparation of the technical portions of the project specifications, Divisions 02000 to 16000. Project specifications shall be clear, concise and non-proprietary.

B. Guide Specifications

1. NAVFAC Guide Specifications

Specifications for FD&CC projects shall be developed using NAVFAC Guide Specifications. Designers are cautioned to edit and modify them to suit the project requirements.

Use of the guide specification do not in any way relieve the designer of their professional obligations as a designer.

NAVFAC specifications are available online from:

<http://www.efdlant.navfac.navy.mil>

If certain portions of the work are not included in any portion of the available guides, the A/E shall prepare the necessary sections using the same format as that in the guides.

2. Preparation of Specifications

NAVFAC Guide specifications are prepared using the "SPECSINTACT" system (also available through the above link). *However, for the final submission the "SPECSINTACT" document shall be converted to Microsoft Word (".doc") file format.*

C. Progress Submissions

1. Outline Specifications (Schematic Design)

Provide a table of contents listing the number and titles of all specification sections that will be included in the project. Indicate the issue date or revision date of each guide specification. For sections for which there is no guide, show an appropriate 5 digit CSI number and title, followed by "A/E will prepare section without a Guide".

2. Project Specifications (100% Submittal)

Provide one set of "Original" specifications in addition to the required number of copies. The original set shall be stamped and signed by all the respective designers.

Specifications shall be complete in all respects, ready for advertisement and bidding with all 100% (and subsequent) review comments incorporated or resolved (Return a copy of prior review comments for back-checking by FD&CC).

In addition to the hardcopies required, provide a complete electronic copy of the specifications in Microsoft Word (".doc") format.

Files shall be named as follows:

"Project Number_SpecSection.doc"

For example:

13X01123_09250.doc

D. Formatting

Project specifications shall comply with applicable sections of Military Handbook 1006/1A "Policy and Procedures for Project Drawings and Specification Preparation" except as modified herein.

1. Specifications shall be single-spaced in 12 point, "New Times Roman" font.
2. Formatted and printed on a single side.
3. Formatted for binding in the left side of the page.

See Exhibit D-1 for a sample specification page.

E. FD&CC Review

FDCCPAC review will be limited to determining conformance with the Federal Acquisition Regulations with regard to the following:

- a. Additive/optional bid items including related paragraphs.
- b. Unit price bid items including related paragraphs.
- c. Proprietary specifications (only with FDCCPAC permission)
- d. "Or equal" specifications (three brand names plus "or equal" is not preferred but will be allowed).
- e. Restrictive specifications (hidden proprietary).
- f. Experience Clauses (only if already in typed specification).
- g. General Paragraphs Section.
- h. Bidding Information Section.1.7.3

Appendix E COST ESTIMATES

1. INTRODUCTION

- A. Questions regarding this chapter may be directed to the Construction Cost Analyst at FD&CC Pacific; (206) 220-7440.
- B. This chapter describes the various cost estimate formats that may be required of the A/E.
- C. The A/E shall be prepared to present the estimate to FD&CC in MS Excel in electronic format upon request.
- D. The A/E estimate shall be targeted to place between the expected low bid and the median bid.

EXHIBITS

- 4A COMMANDANT SUMMARY
- 4B UNIFORMAT LEVEL 1
- 4C UNIFORMAT LEVEL 2
- 4D CSI LEVEL 1
- 4E CSI LEVEL 2

1.1 FORMAT DESIGNATION

- A. For CSI and Unifomat estimates; the Format (see 1.2), Level of detail (1.5 and 1.6), and Type of line item cost breakdown (1.7) are designated by a **"format designation phrase"** such as "CSI Level 1 - Type B."
- B. For each A/E cost estimate submittal, FD&CC shall designate which format(s) are required. Specific unique Unifomat Elements may also be requested.
- C. If FD&CC does not request specific formats, use the following:

Concept: Commandant Summary

Schematic: Commandant Summary and Unifomat Level 1 - Type A

Final: Unifomat Level 2 - Type B

1.2 ESTIMATE FORMATS

- A. Present the summary before the detail section.

- B. The header form shall be presented as shown in the Exhibits, with the column headings in the order shown.
- C. Present a separate and complete detail section for each bid item, i.e., base bid, additives, options.
- D. **All work items shall be descriptive enough to analyze the cost without referring to the plans and specs.**
- E. Identify which cost items are contractor cost items and which are supplied and/or installed by the Government.
- F. Following are the names of the estimate formats, followed by the number of the Exhibit at the end of this section that is an example of that format. Each of the CSI and Uniformat formats can have "Type A" or "Type B" work item cost breakdowns.

1.2.1 COMMANDANT SUMMARY (Exhibit 14-A)

- A. This is a format used to categorize costs to coincide with the Coast Guard budget request.
- B. The project costs shall be divided into the following eight categories:
 - 1.0 Demolition
 - 2.0 Sitework
 - 3.0 Exterior Utilities
 - 4.0 Waterfront/Marine Construction
 - 5.0 Buildings
 - 6.0 Outfitting/Furnishings/Equipment
 - 7.0 Electronics
 - 8.0 Other
- C. Line items within the categories shall be major components of the project. Each line item shall have a description, quantity, unit of measure, unit price, and total.
- D. General Requirements; Overhead, Profit and Bonding; and Taxes shall be included in the line items of work to be done by the contractor. Items supplied and/or installed by the Government shall include Taxes only. Sub-total line items then add contingency followed by escalation.
- E. Note which items are assumed to be supplied and/or installed by the Government.

1.2.2 UNIFORMAT LEVEL 1 (Exhibit 4-B)

- A. The line items in the **summary** shall be Uniformat Elements as shown in the "Uniformat System Breakdown" (1.3).
- B. Elements numbers 0010 through 1000 (Building) shall be sub-totaled separate from numbers 1110 through 1299 (Sitework and Support Facilities).
- C. **General Requirements** may be derived as a percentage of the other direct costs, but not at Level 2.
- D. Each element shall be quantified per 1.4, unit priced and totaled. Overhead, Profit and Bonding; Contingencies; and Escalation shall be shown as individual cost elements following the direct cost elements.
- E. The **detailed** portion of the estimate shall appear after the summary. It shall be divided into Uniformat elements (1.3) in numerical order. The Uniformat elements shall be subdivided into CSI Level 1 Divisions (1.5) in numerical order. The CSI Divisions shall include Level 1 or Level 2 Work Items (1.6).

1.2.3 UNIFORMAT LEVEL 2 (Exhibit 4-C)

- A. The line items in the **summary** shall be uniformat elements described in the "Uniformat System Breakdown" (1.3).
- B. Elements numbers 0010 through 1000 (Building) shall be sub-totaled separate from 1110 through 1299 (Sitework and Support Facilities).
- C. Unlike Level 1, the **General Requirements** total shall be derived by summing the General Requirements items in the detail.
- D. Each element shall be quantified per 1.4, unit priced, and have a separate total for Total, Material, Labor and Equipment. Overhead, Profit and Bonding; Contingencies; and Escalation shall be shown as individual cost elements following the direct cost elements.
- E. The **detailed** portion of the estimate shall be divided into Uniformat elements (1.3) in numerical order. Subdivide elements into CSI Level 2 Divisions (1.5) in numerical order. The CSI Divisions shall include Level 2 Work Items (1.6).

1.2.4 CSI LEVEL 1 (Exhibit 4-D)

- A. The line items in the **summary** shall be the sixteen primary CSI Divisions (see 1.5). Overhead, Profit and Bonding; Contingencies; and Escalation shall be shown as individual cost items following the CSI divisions.
- B. The **detailed** portion of the estimate shall be divided into CSI Level 1 Divisions (see 1.5). Each CSI Division shall include Level 1 Work Items (1.6). A Work Item shall not include costs of work from more than one Level 1 CSI Division.

1.2.5 CSI LEVEL 2 (Exhibit 4-E)

- A. The line items in the **summary** shall be the Level 2 CSI Divisions (see 1.5). Overhead, Profit and Bonding; Contingencies; and Escalation shall follow the CSI Divisions.
- B. The **detailed** portion of the estimate shall be divided into CSI Level 2 Work Items (1.6). A Work Item shall not include costs of work from more than one Level 2 CSI Division.

1.3 UNIFORMAT SYSTEM BREAKDOWN

- A. Following are the numbers and names of the Uniformat Element followed by the unit of measure and work to be included in each element. See 1.4 for Rules of Measurement.

0010 BUILDING DEMOLITION (Demolition Square Feet, DSF)

Includes demolition of portions of buildings to remain, including demolition of flooring, roofing, piping, etc. Exclude complete demolition of buildings and site demolition items.

0110 FOUNDATIONS (Footprint Area, FPA)

Includes excavation and backfill for, and construction of footings, grade beams, pile caps, foundation walls and piers up to the ground floor. Exclude floor slabs, piling and other special foundations, and any excavation or backfilling for basements or to lower or raise site elevations.

0210 SLAB ON GRADE (Footprint Area, FPA)

Includes slab on grade, trenches, pits, and bases, including fine grading, sub-course, embedments, and moisture protection.

0220 BASEMENT CONSTRUCTION (Basement Wall Area, BWA)

Includes basement earthwork, and exterior basement wall construction, including moisture protection and insulation. Only include work below finish grade. Exclude basement wall footings.

0300 SUPERSTRUCTURE (Gross Square Feet, GSF)

Includes stairs, suspended slabs, beams, columns, etc., all within basement walls and/or above grade. Exclude exterior decks.

For **wood frame construction**, include only floor members, columns, and roof structure in this element; include structural wood PARTITIONS and EXTERIOR WALLS with those elements.

For buildings with **structural exterior walls**, e.g., concrete, CMU, and structural studs, include with EXTERIOR WALLS or BASEMENT CONSTRUCTION.

0410 EXTERIOR WALLS AND SOFFITS (Exterior Wall plus Soffit area, EWS)

Includes exterior walls and soffit above grade. Structural items that are in the exterior wall, but the skin of the building does not directly attach to them, e.g., columns, bracing, beams, shall be included in SUPERSTRUCTURE.

Includes concrete, CMU and stud walls, furring, girts, parapets, insulation (both within wall and attached to interior face of wall), sheathing and louvers. Excludes wall board and finishes to interior of exterior wall. Excludes doors and windows.

0420 EXTERIOR DOORS AND WINDOWS (Door and Window Area, DWA)

Includes exterior doors, frames, hardware, windows, and window walls. Includes finishes for above items. Excludes louvers.

0500 ROOFING (Roofing Area, RA)

Includes all roof coverings, fascia, downspouts, gutters, skylights, blocking, flashing, and trim. Includes thermal insulation above and below the roof structure.

0610 PARTITIONS (Gross Square Feet, GSF)

Includes partitions and their wallboard with taping and joint spackling, doors, door frames, door hardware, and relites. Includes wallboard to interior face of exterior walls. Excludes finishes. Excludes toilet cubicles.

0620 INTERIOR FINISHES (Gross Square Feet, GSF)

Includes finishes to walls and floors, and complete ceiling systems. Excludes taping and spackling of wallboard wall joints.

0630 SPECIALTIES (Gross Square Feet, GSF)

Includes interior items in CSI's 10000, 12000, 05500, casework, corner guards, rails, balusters, shelving, etc.

0700 CONVEYING (Stops, STP)

Includes elevators, escalators, pneumatic tube systems, conveyors, chutes, cranes, etc.

0810 PLUMBING (*Fixtures, FIX*)

Plumbing to five foot building line. Exclude fire protection. Exclude plumbing for SPECIAL MECHANICAL items.

0820 HVAC (*Heated Square Feet, HSF*)

Heating, ventilating and air conditioning to five feet line. Fuel tanks shall be included in 1134.

0830 FIRE PROTECTION (*Protected Square feet, PSF*)

Fire protection systems to five feet line.

0840-0899 SPECIAL MECHANICAL elements (*as is appropriate*)

Compressed air systems, vacuum systems, chemical waste systems, medical gas systems, mechanical for freezers, solar, etc.

0900 ELECTRICAL (*Gross Square Feet, GSF*)

Power, lighting, telephone, data and fire alarm systems to five feet building line. Exclude primary power transformers. Exclude electrical for SPECIAL MECHANICAL SYSTEMS.

0910-0999 SPECIAL ELECTRICAL elements (*as is appropriate*)

Includes special communication, detection, alarm, generator, uninterruptable power, battery, security, and grounding systems.

1000 EQUIPMENT (*Gross Square Feet, GSF*)

Includes equipment typically specified in CSI 11000.

1110 SITE PREPARATION AND DEMOLITION (*Site Square Yards, SSY*)

Includes site clearing, grubbing, and earthwork to bring site to rough grades before site improvements and construction of structures. Exclude basement and foundation earthwork.

Includes complete and size reducing demolitions of structures and utilities. Demolition work to a building that does not reduce the size of the building shall be in 0010. Exclude marine demo.

1120 SITE IMPROVEMENT (*Improved Square Yards, ISY*)

Includes landscaping, patios, sidewalks, parking, roads, including fine grading and sub-course, etc.

1121-1129 SUPPORT FACILITIES ELEMENTS (*as appropriate*)

Dedicate separate elements for facilities with several cost items, but not enough for a separate estimate, e.g., pump houses, picnic shelters, decks, carports, etc.

1131 SITE WATER (Length of Water Pipe, LF)

Includes water pipe, valves, pumps (with associated electrical), associated earthwork, etc.

1132 SITE STORM DRAINAGE (Length of Storm Drain Pipe, LF)

Includes storm drain pipe, catch basins, earthwork, etc.

1133 SITE SEWAGE (Length of sewer and Drain Field Pipe, LF)

Includes sewer pipe, manholes, lift stations (with associated electrical), septic systems, earthwork, etc.

1134 SITE FUEL (as appropriate)

Tanks, pumps, pipe, tank pads, etc.

1135-1139 OTHER SITE PIPING ELEMENTS

Compressed air, etc.

1140-1149 SITE ELECTRICAL (as appropriate)

Includes power lines, transformers, site lighting, associated earthwork, concrete pads, etc.

1150-1159 SPECIAL FOUNDATION ELEMENTS (as appropriate)

Piling on land, caissons, underpinning, sheeting and shoring, etc. Include pile caps in "0110 Foundations."

1200-1299 MARINE AND RAILROAD ELEMENTS (as appropriate)

Includes piers, boat haulouts, rip-rap, breakwaters, etc. Includes utilities over water. Portions of utility lines serving waterfront that are on land shall be shown in elements 1130-1149.

1300 GENERAL REQUIREMENTS (@ Level 1: percent, @ Level 2: months)

Includes general contractor's field overhead. Excludes labor fringes and payroll taxes and insurances of labor performed in other sections. These costs are to be included in the unit costs of items in those sections. Exclude home office overhead, profit, bonding and insurance premiums.

1410 PRIME CONTRACTOR OVERHEAD, PROFIT AND BOND (percentage)

Includes the general contractor's home office overhead, profit and bonding applicable to the project. Exclude direct labor taxes and insurances.

1420 SALES TAX (percentage)

State sales and use taxes on materials or project value in states that it's appropriate. Do not use this element if material unit prices include sales tax.

1510 DESIGN, ESTIMATING AND BID CONTINGENCY (percentage)

Contingency added to estimate to cover unidentified cost items that will be defined in later design stages. Bid contingency may be included in estimates for projects that might receive higher bids than would normally be expected.

1520 ESCALATION (percentage)

Cost added to estimate to midpoint of construction. The costs of items in the estimate are what the items would cost if installed on the date of the estimate.

1.4 UNIFORMAT RULES OF MEASUREMENT

BWA - Basement Wall Area: Wall area below grade. In square feet.

DSF - Demolition Square Feet: The portion of the gross square footage of a building that is subjected to demolition.

DWA - Door and Window Area: Area of exterior doors and windows. In square feet.

EWS - Exterior Wall and Soffit Area: Wall area above grade, portion of soffit area that is 3 feet beyond wall, and parapet area. Individual openings (doors and windows) in the wall greater than 70 square feet shall not be counted. Measured in square feet.

FIX - Fixtures: Following count as one fixture; toilet, sink, shower, bathtub, dishwasher, drinking fountain, urinal. Following count as 1/3 of a fixture; hose bibs, roof and floor drains. Do not count pumps and water heaters as fixtures.

FPA - Footprint Area: Horizontal area enclosed by outside edge of perimeter foundation wall. Measured in square feet.

GSF - Gross Square Feet: Horizontal area of enclosed floors with more than 6'6" head space to structure above, measured from outside of exterior wall. Include mechanical, elevator and stair shafts. Exclude voids in the floor more than 100 square feet. The following shall be added at half value: covered portion of patios and entries with at least five feet of covering beyond exterior wall, and floors with less than 6'6" of head space to structure above.

HSF - Heated Square Feet: Area heated and/or air conditioned.

ISY - Improved Square Yards: Developed site area minus building footprint areas.

PSF - Protected Square Feet: Area of a building protected by a fire extinguishing system. Include attic and crawl spaces.

RA - Roof Area: Area of roof measured flat. Measure to outer edge of parapets and eaves. Include canopies. In square feet.

SSY - Site Square Yards: Developed site area including buildings.

STP - Stops; Number of elevator stops. Measured by each.

1.5 CSI DIVISIONS

1.5.1 LEVEL 1 CSI DIVISIONS BREAKDOWN

At this level, the work items shall be divided into the sixteen primary CSI divisions:

| | |
|-------|----------------------|
| 01000 | General Requirements |
| 02000 | Sitework |
| 03000 | Concrete |
| 04000 | Masonry |
| 05000 | Metals |
| 06000 | Wood and Plastic |
| 07000 | Thermal and Moisture |
| 08000 | Doors and Windows |
| 09000 | Finishes |
| 10000 | Specialties |
| 11000 | Equipment |
| 12000 | Furnishings |
| 13000 | Special Construction |
| 14000 | Conveying System |
| 15000 | Mechanical |
| 16000 | Electrical |

1.5.2 LEVEL 2 CSI DIVISIONS BREAKDOWN

- A. At this level, the work items shall be divided into more specific specification divisions than at LEVEL 1. For example, work items in "05000 Metals" would be divided into "05120 Structural Steel," "05210 Steel Joists," "05311 Steel Roof Deck," and "05500 Metal Fabrications" for a project with work in these divisions.
- B. This level of breakdown is necessary to segregate individual subcontractor and supplier costs.

1.6 WORK ITEMS

- A. All work items shall be descriptive enough for a reviewer to analyze the pricing without referring to the plans and specs. Words in descriptions may be abbreviated.
- B. Quantity of work items shall be commensurate with level of detail on plans.

1.6.1 LEVEL 1 WORK ITEMS BREAKDOWN

- A. At this level of work breakdown, the estimate is broken into fewer work items than at Level 2. The costs of distinct work activities that together produce a single construction component may be combined into one work item as long as they are in the same Level 1 CSI division. For example, the costs of the forming, rebar, concrete, and finishing for a concrete deck may be combined into one work item. The work item should be described and quantified as follows:

| | |
|-------------------------|------------|
| Concrete deck, 4" thick | 982 SF, or |
| Concrete deck, 4" thick | 12 CY |

Likewise, the costs of the frame, door and hardware may be combined into a single work item as follows:

| | |
|---|-------|
| Single hollow metal door with frame + hdw | 10 EA |
|---|-------|

- B. Components of construction that have different unit costs must be itemized separately even though they may be functionally and/or compositionally alike. For example, all the concrete footings for a building may not be lumped into one item and assigned a cost per cubic yard if they vary in size or form to a degree that their unit costs are significantly different.
- C. It is okay to use Level 2 Work Items in lieu of Level 1.

1.6.2 LEVEL 2 WORK ITEMS BREAKDOWN (more detail than Level 1)

- A. At this level, the estimate shall be broken down into more work items than at Level 1. All distinct work activities shall be presented as separate work items. For example, the work that is required to construct a concrete deck would include the following items in the estimate:

| | |
|------------------------|--------|
| Form concrete deck | 982 SF |
| Rebar in concrete deck | .6 TON |
| Pour concrete deck | 12 CY |
| Finish concrete deck | 982 SF |

Likewise, the cost of a single door would be shown by the following items in the

estimate:

| | |
|------------------------------------|--------|
| Single hollow metal door | 10 EA |
| Hardware for single door | 10 SET |
| Hollow metal frame for single door | 10 EA |

- B. A level 2 work item shall not contain costs of work from more than one Level 2 CSI division. This level of detail is necessary to segregate the costs of various vendors, suppliers, trades and subcontractors.

1.7 UNIT COST BREAKDOWN

- A. All prices in the estimate shall be the price for the item installed on the date of the estimate at the geographic location of the project, i.e., **do not have separate cost item(s) for geographic cost factors**. If lodging, per diem, and/or travel are included in labor rates, indicate.
- B. **Do not show dollar signs. Round to nearest dollar and leave out decimal in Total columns.** Order of column headings shall be as shown in Exhibits.

1.7.1 TYPE A UNIT COST BREAKDOWN

- A. The cost of each work item in this type of unit cost breakdown shall be shown by one total unit cost. The unit cost will include the cost of material, labor (including fringes and labor taxes and insurances), equipment and subcontractor overhead and profit for work expected to be performed by subcontractors. Work items expected to be performed by the prime contractor shall exclude overhead and profit. Show prime's OH&P in the summary.
- B. Note which items include subcontractor OVHD and PROFIT.
- C. If the estimator chooses, he may fill in the "MATERIAL," "LABOR," and "EQUIPMENT" columns (Type B Breakdown).

1.7.2 TYPE B UNIT COST BREAKDOWN (more detail than Type A)

- A. Every work item cost shall be divided into Material, Labor and Equipment in this type of cost breakdown. The unit prices for work items expected to be performed by subcontractors shall include the subcontractors' overhead and profit in the unit prices.
- B. The estimator shall include a note in the estimate stating which work items include or exclude subcontractor overhead and profit.
- C. Include the following in Material columns: dump fees, utility charges, supplies, temporary offices, trailers, sanikan, dumpster, freight, temporary fence, off-site

fabrication labor.

- D. Include the following costs in Equipment columns: power equipment larger than hand tools, e.g., air compressors, welding machines, jack hammers, tampers, forklifts, boom trucks, pickups, backhoes, cranes, etc. Include hand tools with Labor.

1.8 ADDITIONAL REQUIREMENTS

1.8.1 WAGE RATES, OVERTIME, LODGING, PER-DIEM, FREIGHT AND SALES TAX

- A. Estimator shall be prepared to submit a report, upon request, that shows hourly labor costs used to derive labor unit costs for each trade to be used in the project. Cost per hour labor taxes and insurances. Lodging and per-diem, if appropriate, shall be included in labor rates or shown in General Requirements. Estimator shall note where lodging and per-diem are included.
- B. For construction work in remote regions, the estimator shall include freight costs in Division 2-16 work items.
- C. Estimator shall note the sales tax rate included in the material unit costs, or show as a line item in the summary.

1.9 ESTIMATE EXAMPLES

One example for each of the five estimate formats are presented herein. Each of the CSI and Unifomat formats could have "Type A" or "Type B" cost breakdowns. Only one example for each format is presented herein. If the "Type" of cost breakdown in the example is not the one required by FD&CC look at another example that has that "Type" of cost breakdown and interpolate.

EXHIBIT 4A Commandant Summary

| 3.4 COST ESTIMATE | | | | | 11/8/99 | |
|--------------------------------|---|--------|--------------|-----------|---------|----------------|
| COMMANDANT SUMMARY | | | | | PPR-B | |
| CPB Moorings, Port Angeles, WA | | | | | | |
| ITEM NO. | | QUANT | UNIT OF MEAS | UNIT COST | TOTAL | |
| | CONTRACTOR COSTS: | | | | | |
| 1.0 | DEMOLITION: | | | | | 12,100 |
| 1.1 | 1 1/2" water pipe on pier | 150 | lf | 7.00 | 1,100 | |
| 1.2 | 2ea 2000gal fuel tanks, 200' pipe, pump | | ls | | 11,000 | |
| 2.0 | SITEWORK: | | | | | 21,000 |
| 2.1 | earthwork for bldg and paving | 900 | cy | 14.00 | 12,600 | |
| 2.2 | concrete sidewalks to bldg | 800 | sf | 5.50 | 4,400 | |
| 2.3 | asphalt paving, 3", w/ subcourse | 100 | sy | 40.00 | 4,000 | |
| 3.0 | UTILITIES: | | | | | 36,800 |
| 3.1 | 1" water w/ earthwk | 80 | lf | 50.00 | 4,000 | |
| 3.2 | 8" storm drain w/ earthwk | 70 | lf | 70.00 | 4,900 | |
| 3.3 | 4" hdpe san sewer w/ earthwk | 120 | lf | 65.00 | 7,800 | |
| 3.4 | 4" c + wire from substa, incl 150A ckt brkr | 60 | lf | 75.00 | 4,500 | |
| 3.5 | pad mnt xfmr, 112.5KVA 120/208V 3ph | 1 | ea | 10,000.00 | 10,000 | |
| 3.6 | 2ea 4" c, 100pr, and 12 strand f.o. cable | 80 | lf | 70.00 | 5,600 | |
| 4.0 | WATERFRONT/MARINE: | | | | | 46,000 |
| 4.1 | marine mobilize and demobilize | | ls | | 15,000 | |
| 4.2 | remove 10 pile dolphin at west end | 2 | day | 5,500.00 | 11,000 | |
| 4.3 | haul and dump creos piling | 10 | ea | 200.00 | 2,000 | |
| 4.4 | rotate log boom and secure w/ conc sinkr | | ls | | 3,000 | |
| 4.5 | new 8 pile dolphin at end of log boom | 1 | ea | 15,000.00 | 15,000 | |
| 5.0 | BUILDING CONSTRUCTION | | | | | 301,600 |
| 5.1 | WPB Suprt bldg, cmu, stnd sm rfg, el heat | 2320 | GSF | 130.00 | 301,600 | |
| | CONTRACTOR SUB-TOTAL TODAY | | | | | 417,500 |
| | Escalate to midpt, July 00 | 3.00% | | | | 13,000 |
| | CONTRACTOR SUB-TOTAL w/ Escal | | | | | 430,500 |
| | Design contingency | 15.00% | | | | 65,000 |
| | TOTAL CONTRACTOR BID | | | | | 495,500 |
| | Construction contingency | 5.00% | | | | 25,000 |
| | TOTAL CONTRACTOR COST | | | | | 521,000 |

EXHIBIT 4A Commandant Summary

| 3.4 COST ESTIMATE | | 11/8/99 | | | | |
|---------------------------------------|--|----------------|--------------|-----------|-------|----------------|
| COMMANDANT SUMMARY | | PPR-B | | | | |
| CPB Moorings, Port Angeles, WA | | | | | | |
| ITEM NO. | | QUANT | UNIT OF MEAS | UNIT COST | TOTAL | |
| | | | | | | |
| | NON-CONTRACTOR COSTS: | | | | | |
| 6.0 | FURNISHINGS | | | | | 15,000 |
| 7.0 | ELECTRONICS OUTFITTING | | | | | 42,000 |
| 7.1 | computing (8 computrs + 1 server) | | ls | 21,500 | | |
| 7.2 | data dist equip | | ls | 11,000 | | |
| 7.3 | voice dist equip | | ls | 9,500 | | |
| 8.0 | OTHER: none | | | | | 0 |
| | NON-CONTRACTOR SUB-TOTAL TODAY | | | | | 57,000 |
| | Escalate to midpt, July 00 | 3.00% | | | | 2,000 |
| | NON-CONTRACTOR SUB-TOTAL w/ Escal | | | | | 59,000 |
| | Design contingency | 15.00% | | | | 9,000 |
| | TOTAL NON-CONTRACTOR COST | | | | | 68,000 |
| | TOTAL CONTRACTOR plus NON-CONTR | | | | | 589,000 |

5/12/97 Schem Est

| 5/12/97 Schem Est | | | | TOTAL | |
|-------------------|---|-------|------|----------|---------|
| UNIF | CSI | Q | UNIT | \$/U | COST |
| | SUMMARY | | | | |
| | BUILDING: | | | | |
| 0010 | Bldg Demo | 7350 | SF | 4.51 | 33118 |
| 0100 | Foundations | 3600 | FPA | 10.37 | 37346 |
| 0210 | Slab on Grade | 3600 | FPA | 5.44 | 19578 |
| 0300 | Superstructure, Addn | 6500 | GSF | 15.76 | 102457 |
| 0310 | Seismic Retrofit | 7350 | SF | 1.12 | 8220 |
| 0410 | Ext Walls & Soffits, Addn | 4750 | EWA | 24.90 | 118288 |
| 0415 | Ext Walls & Soffits, Exist | 4500 | EWA | 2.71 | 12206 |
| 0420 | Ext Doors & Windows | 730 | DWA | 41.21 | 30086 |
| 0500 | Roofing, repl + new | 8960 | RA | 4.07 | 36501 |
| 0610 | Partitions | 8350 | GSF | 14.35 | 119862 |
| 0620 | Finishes | 8350 | GSF | 7.46 | 62270 |
| 0630 | Specialties | 8350 | GSF | 4.08 | 34094 |
| 0700 | Convey | 2 | STP | 24000.00 | 48000 |
| 0810 | Plumbing | 45 | FIX | 2422.98 | 109034 |
| 0820 | HVAC | 8350 | GSF | 21.60 | 180395 |
| 0830 | Fire Protection | 21125 | PSF | 2.41 | 51008 |
| 0840 | Special Mech (welding + compr air) | 8350 | GSF | 1.06 | 8880 |
| 0900 | Electrical | 8350 | GSF | 26.71 | 222996 |
| | Bldg Total, Div 2-16 | 8350 | GSF | 147.82 | 1234337 |
| | SITework & SUPPORT FACILITIES: | | | | |
| 1110 | Demolition + Preparation | 1000 | SSY | 26.93 | 26930 |
| 1120 | Improvements | 600 | ISY | 39.46 | 23678 |
| 1131 | Water | | LS | | 13350 |
| 1132 | Storm | | LS | | 4404 |
| 1133 | Sewer (excl lift station) | | LS | | 16500 |
| 1134 | Fuel | | LS | | 36290 |
| 1140 | Electric (excl shoretie off-shore) | | LS | | 59834 |
| 1150 | Foundation @ Seawall | | LS | | 83145 |
| 1151 | Batter Piles @ Wharf | | LS | | 50500 |
| | Site Total, Div 2-16 | 1000 | SSY | 39.46 | 314631 |
| | Total, Div 2-16 | | | | 1549000 |
| 1300 | Gen Requirements | 9 | pct | 139000 | 1688000 |
| 1410 | Prime's OH+P+Bond | 12 | pct | 203000 | 1891000 |
| 1510 | Design, Est, Bid Contingency | 10 | pct | 203000 | 1891000 |
| 1520 | Escal to midpt 2/98 | 3 | pct | 57000 | 1948000 |

5/12/97 Schematic Est

| | | | | TOTAL | |
|-------------|-------|--|------|-------|--------------|
| UNIF | CSI | | Q | UNIT | \$/U COST |
| 0100 | | FOUNDATION | | | |
| 0100 | 02000 | excavation + stockpile | 290 | cy | 10.00 2900 |
| 0100 | 02000 | backfill + comp native | 236 | cy | 15.00 3540 |
| 0100 | 02000 | load, haul + Disposal, 10 miles ow | 54 | cy | 20.00 1080 |
| 0100 | 03000 | footings w/form pour rebr | 25 | cy | 400.00 10000 |
| 0100 | 03000 | fdn walls " " " " , 6" th. | 29 | cy | 550.00 15950 |
| 0100 | 03000 | roughen ex conc fdn wall | 130 | sf | 6.00 780 |
| 0100 | 03000 | dowell bars to ex fdn wall, 3/4" dia x 6" | 20 | ea | 90.00 1800 |
| 0100 | 07000 | rig insul, 2" polystyrene | 720 | sf | 1.80 1296 |
| 0210 | | SLAB ON GRADE | | | |
| 0210 | 02000 | exc + haul top 10" | 105 | cy | 20.00 2100 |
| 0210 | 02000 | fine grade + compact | 3564 | sf | 0.30 1069 |
| 0210 | 02000 | 4" stone under slab | 44 | cy | 40.00 1760 |
| 0210 | 02000 | 2" sand under slab | 22 | cy | 45.00 990 |
| 0210 | 03000 | grade slab, frm, rebr, pour, fin, 5" | 55 | cy | 260.00 14300 |
| 0300 | | SUPERSTRUCTURE, ADDN | | | |
| 0300 | 03000 | 4" topping slab, 2888sf | 42 | cy | 260.00 10920 |
| 0300 | 03000 | 4" topping slab @ mezz, 160sf | 3 | cy | 260.00 780 |
| 0300 | 05000 | tube steel columns , 4"sq x 1/4" x 12', 16ea | 2600 | lb | 2.00 5200 |
| 0300 | 05000 | tube steel beams, 4x12x3/8 | 5000 | lb | 1.60 8000 |
| 0300 | 05000 | channel framing | 1100 | lb | 1.90 2090 |
| 0300 | 05000 | wide flange beams, W14x30 | 4100 | lb | 1.80 7380 |
| 0300 | 05000 | connections | 1300 | lb | 2.60 3380 |
| 0300 | 05000 | metal deck , 2" 18ga, 2nd flr | 2800 | sf | 2.00 5600 |
| 0300 | 05000 | metal deck, 2" 20ga, mezz | 160 | sf | 2.80 448 |
| 0300 | 05000 | steel ships ladder w/ rails, 12' flr to flr | 1 | ft | 1800.00 1800 |
| 0300 | 06000 | pre-eng rf trusses, 2x6 incl canopy | 5046 | sf | 4.00 20184 |

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(Uniform Level 2 i, Final Est

| UNIF | CSI | | Q | U | TOTAL | | MATERIAL | | LABOR | | EQUIPMENT | |
|------|-----|--------------------------------------|------|-----|---------|---------|----------|--------|---------|--------|-----------|-------|
| | | | | | \$/U | COST | \$/U | TOTAL | \$/U | TOTAL | \$/U | TOTAL |
| | | SUMMARY | | | | | | | | | | |
| | | Base Bldg: | | | | | | | | | | |
| 0100 | | FOUNDATIONS incl stem walls + mat | 7820 | FPA | 15.65 | 122364 | 7.29 | 57020 | 7.89 | 61665 | 0.47 | 3668 |
| 0210 | | CRAWL & FLOOR ABOVE excl walls + mat | 7820 | FPA | 9.00 | 70342 | 4.99 | 38985 | 2.87 | 22466 | 1.14 | 8891 |
| 0300 | | SUPERSTRUCT excl first floor | 7300 | GSF | 16.93 | 123581 | 11.31 | 82580 | 4.81 | 35107 | 0.81 | 5893 |
| 0410 | | EXTERIOR WALLS & SOFFIT | 6176 | EWS | 12.44 | 76819 | 5.55 | 34288 | 6.89 | 42532 | | |
| 0420 | | EXTERIOR DOORS AND WINDOWS | 754 | DWA | 32.81 | 24738 | 24.22 | 18258 | 8.59 | 6480 | | |
| 0500 | | ROOFING | 9920 | RA | 4.44 | 44086 | 2.52 | 24990 | 1.93 | 19097 | | |
| 0610 | | PARTITIONS | 6850 | HSF | 14.89 | 101988 | 8.52 | 58356 | 6.37 | 43633 | | |
| 0620 | | INTERIOR FINISHES | 6850 | HSF | 11.50 | 78784 | 6.22 | 42631 | 5.28 | 36154 | | |
| 0630 | | SPECIALTIES AND CASEWORK | 6850 | HSF | 14.81 | 101470 | 12.21 | 83656 | 2.60 | 17814 | | |
| 0810 | | PLUMBING | 47 | FXT | 2277.05 | 107021 | 1244.70 | 58501 | 1032.34 | 48520 | | |
| 0820 | | HVAC | 6850 | HSF | 34.02 | 233058 | 19.32 | 132368 | 14.70 | 100690 | | |
| 0830 | | FIRE PROTECT | 6850 | PSF | 2.45 | 16800 | 1.17 | 8034 | 1.28 | 8766 | | |
| 0840 | | SPECIAL MECH (excl equip) | 6850 | HSF | 1.92 | 13167 | 0.94 | 6466 | 0.98 | 6701 | | |
| 0900 | | ELECTRICAL | 6850 | HSF | 20.21 | 138416 | 9.68 | 66325 | 10.52 | 72091 | | |
| 0910 | | SPECIAL ELECTRICAL | 6850 | HSF | 3.28 | 22481 | 1.85 | 12681 | 1.43 | 9800 | | |
| 1000 | | EQUIPMENT (excl Gov furnished) | 6850 | HSF | 20.18 | 138262 | 17.90 | 122634 | 2.28 | 15628 | | |
| | | BUILDING TOTAL DIV 2-16 | 7300 | GSF | 193.61 | 1413368 | 116.13 | 847772 | 74.95 | 547144 | 2.53 | 18452 |
| | | Base Site & Support Facilities: | | | | | | | | | | |
| 1110 | | PREP | 9000 | SSY | 19.39 | 174479 | 6.24 | 56177 | 9.20 | 82772 | 3.95 | 35531 |
| 1120 | | IMPROVEMENTS | 8200 | ISY | 15.87 | 130162 | 7.32 | 60030 | 7.31 | 59973 | 1.24 | 10159 |
| 1121 | | TEMP EAST WALLS | | LS | | 10650 | | 4130 | | 6220 | | 300 |
| 1122 | | PAINT STORAGE BLDG | 300 | SF | 30.00 | 9000 | 10.00 | 3000 | 15.00 | 4500 | 5.00 | 1500 |
| 1123 | | RELOCATE MMP BLDG | 600 | SF | 20.00 | 12000 | 5.00 | 3000 | 10.00 | 6000 | 5.00 | 3000 |
| 1131 | | WATER | | LS | | 164901 | | 81467 | | 64072 | | 19361 |
| 1132 | | STORM DRAINAGE | | LS | | 19910 | | 9998 | | 9274 | | 638 |
| 1133 | | SEWAGE | | LS | | 26180 | | 13310 | | 10695 | | 2175 |
| 1134 | | FUEL | | LS | | 15573 | | 8711 | | 6387 | | 475 |
| 1140 | | ELECTRICAL | | LS | | 3354 | | 1300 | | 1748 | | 306 |
| 1150 | | PIILING | 7820 | FPA | 20.18 | 83461 | 9.18 | 48119 | 5.00 | 31709 | 6.00 | 3633 |
| | | TOTAL SITE & SUPPORT DIV 2-16 | 9000 | SSY | 113.68 | 649669 | | 289242 | | 283350 | | 77078 |

Rockshore Clinic Final Est
(Uniformat Level 2 Type B)

5/13/97

| UNIF | CSI | Q | U | TOTAL | | MATERIAL | | LABOR | | EQUIPMENT | |
|------|-------|---|------|-------|---------|----------|---------|-------|--------|-----------|-------|
| | | | | \$/U | COST | \$/U | TOTAL | \$/U | TOTAL | \$/U | TOTAL |
| 0820 | | | | | | | | | | | |
| | HVAC | | | | | | | | | | |
| 0820 | 15190 | | 6850 | GSF | 0.06 | 431 | 0.02 | 148 | 0.04 | 283 | |
| 0820 | 15200 | | 6850 | GSF | 0.11 | 747 | 0.05 | 370 | 0.06 | 377 | |
| 0820 | 15250 | | 50 | LF | 4.13 | 205 | 2.39 | 118 | 1.75 | 86 | |
| 0820 | 15250 | | 30 | LF | 6.71 | 199 | 4.37 | 130 | 2.34 | 69 | |
| 0820 | 15250 | | 139 | LF | 5.40 | 749 | 3.37 | 467 | 2.04 | 282 | |
| 0820 | 15250 | | 234 | LF | 3.78 | 885 | 2.03 | 476 | 1.75 | 409 | |
| 0820 | 15250 | | 79 | LF | 6.60 | 523 | 4.27 | 338 | 2.34 | 185 | |
| 0820 | 15250 | | 89 | LF | 3.80 | 338 | 2.05 | 183 | 1.75 | 156 | |
| 0820 | 15512 | | | | | | | | | | |
| 0820 | 15512 | | | | | | | | | | |
| 0820 | 15512 | | 1 | EA | 586.99 | 587 | 470.45 | 470 | 116.55 | 117 | |
| 0820 | 15512 | | 1 | EA | 122.25 | 122 | 81.00 | 81 | 41.25 | 41 | |
| 0820 | 15512 | | 2 | EA | 892.50 | 1785 | 810.00 | 1620 | 82.50 | 165 | |
| 0820 | 15512 | | 1 | EA | 470.69 | 471 | 237.60 | 238 | 233.09 | 233 | |
| 0820 | 15512 | | | | | | | | | | |
| 0820 | 15512 | | 1 | EA | 2000.00 | 2000 | 1300.00 | 1300 | 700.00 | 700 | |
| 0820 | 15512 | | 1 | EA | 960.00 | 960 | 800.00 | 800 | 160.00 | 160 | |
| 0820 | 15512 | | 2 | EA | 740.00 | 1480 | 600.00 | 1200 | 140.00 | 280 | |
| 0820 | 15512 | | 5 | EA | 850.00 | 4250 | 700.00 | 3500 | 150.00 | 750 | |
| 0820 | 15512 | | | | | | | | | | |
| 0820 | 15512 | | 3 | EA | 153.31 | 460 | 95.04 | 285 | 58.27 | 175 | |
| 0820 | 15512 | | 150 | LF | 31.05 | 4657 | 21.44 | 3216 | 9.61 | 1442 | |
| 0820 | 15512 | | 30 | LF | 10.66 | 320 | 4.26 | 128 | 6.41 | 192 | |
| 0820 | 15512 | | 4 | EA | 78.70 | 315 | 34.99 | 140 | 43.71 | 175 | |

1/12/91 Schematic Est

| CSI | | Q | UNIT | TOTAL \$/U COST |
|--|-------------------------|----|------|--------------------|
| CSI SUMMARY | | | | |
| 01000 | General Requirements | | | 236597 |
| 02000 | Sitework | | | 47616 |
| 03000 | Concrete | | | 192393 |
| 04000 | Masonry | | | |
| 05000 | Metals | | | 275640 |
| 06000 | Wood and Plastic | | | 132001 |
| 07000 | Thermal & Moist Protect | | | 244198 |
| 08000 | Doors and Windows | | | 84266 |
| 09000 | Finishes | | | 297663 |
| 10000 | Specialties | | | 83926 |
| 11000 | Equipment | | | 30360 |
| 12000 | Furnishings | | | 12333 |
| 13000 | Special Construction | | | |
| 14000 | Conveying Systems | | | |
| 15000 | Mechanical | | | 481091 |
| 16000 | Electrical | | | 335141 |
| TOTAL DIRECT COST | | | | 2865453 |
| TOTAL w/ GEN CONTRACTOR'S OVERHEAD, PROFIT & BOND | | 10 | PCT | 3151998 |
| TOTAL w/ DESIGN, ESTIMATE and BID CONTINGENCY | | 10 | PCT | 3467198 |
| TOTAL w/ ESCALATION to MIDPOINT 6/92 | | 6 | PCT | 3814000 |

Shoreville Site Upgrades
2/12/91 Schematic Estimate

(CSI Level 1 Type A, Detail)

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| | | TOTAL | | | |
|--------------|---|-------|------|---------|-------|
| | | Q | UNIT | \$/U | COST |
| 02000 | Site Work | | | | |
| 02000 | 6" pvc water w/ earth, 4' ave dp | 33 | lf | 15.00 | 495 |
| 02000 | 4" pvc water w/ earth, 4' ave dp | 810 | lf | 14.00 | 11340 |
| 02000 | 1-1/2" cu water w/ earth, 3' ave dp | 227 | lf | 6.85 | 1555 |
| 02000 | 6" water valves | 2 | ea | 607.00 | 1214 |
| 02000 | 12"-18" cmp storm w/ earth 5' ave dp | 368 | lf | 17.87 | 6576 |
| 02000 | precast catch basins w/ earth, 4' dp | 2 | ea | 850.00 | 1700 |
| 02000 | precast cb's w/ grate + earthwk, 6' dp | 3 | ea | 1200.00 | 3600 |
| 02000 | 8" di sewer w/ earth, 5' ave dp | 102 | lf | 35.94 | 3666 |
| 02000 | 4" di sewer w/ earth, 5' ave dp | 370 | lf | 29.61 | 10956 |
| 02000 | precast swr mh's w/lid + earthwk 6' dp | 2 | ea | 1400.00 | 2800 |
| 02000 | struct fill @ roads, imported | 44 | cy | 22.12 | 973 |
| 02000 | rock excav for road + haul 3 miles | 10 | cy | 60.00 | 600 |
| 02000 | excav for headwall, stockpile | 45 | cy | 10.14 | 456 |
| 02000 | backfill for headwall | 20 | cy | 12.00 | 240 |
| 02000 | haul excess soil, 4 miles | 25 | cy | 13.00 | 325 |
| 02000 | rip-rap @ headwall | 32 | cy | 35.00 | 1120 |
| 03000 | Concrete | | | | |
| 03000 | 6" headwall @ drain, frm, rebr pour | 8 | cy | 542.00 | 4336 |
| 03000 | 6" tmsfrm slab w/ form rbar pour | 6 | cy | 295.00 | 1770 |
| 03000 | stairs on grade w/ frm, rebr pour | 7 | cy | 450.00 | 3150 |
| 04000 | Masonry | | | | |
| 04000 | 8" cmu screen wall, fill + rebr | 235 | sf | 11.90 | 2797 |
| 05000 | Metals | | | | |
| 05000 | 3 tier steel pipe guardrail @ stairs | 50 | lf | 30.00 | 1500 |
| 05000 | 5 tier steel pipe guardrail @ ramp | 42 | lf | 38.00 | 1596 |
| 05000 | 5 tier steel pipe guardrail @ load dock | 33 | lf | 38.00 | 1254 |
| 09000 | Finishes | | | | |
| 09000 | paint cmu | 470 | sf | 0.80 | 376 |
| 09000 | paint 3 tier railings | 50 | lf | 12.00 | 600 |
| 09000 | paint 5 tier railings | 75 | lf | 14.00 | 1050 |
| 16000 | Electrical | | | | |
| 16000 | 1" pvc cnd w/ 3ea#8 + earthk for lights | 640 | lf | 12.90 | 8256 |
| 16000 | 25' aluminum poles w/ 2 ea 100w hps | 5 | ea | 1770.00 | 8850 |
| 16000 | 2" pvc cnd w/3ea#1/0 + earthk for pwr | 126 | lf | 26.00 | 3276 |
| 16000 | 4'x4'x3' conc vault w/ earth | 2 | ea | 880.00 | 1760 |
| 16000 | 75 kva transformer 5kv/480-240v | 1 | ea | 3600.00 | 3600 |
| 16000 | 1" pvc cnd + earthk for telep | 430 | lf | 12.90 | 5547 |
| 16000 | 50 pr CAT5 telep wire | 440 | lf | 7.00 | 3080 |
| 16000 | fglass handholes 2'x2'x2', for telep | 5 | ea | 500.00 | 2500 |

ROCK POINT WAREHOUSE
12/12/91 Final Est

CSI Level 2 Type B (Summary)

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| | TOTAL | | MATERIAL | | LABOR | | EQUIP | |
|--------------------------------|-------|--------|----------|--------|-------|--------|-------|-------|
| | \$/U | COST | \$/U | COST | \$/U | COST | \$/U | COST |
| CSI | | | | | | | | |
| CSI SUMMARY | | | | | | | | |
| 01000 General Requirements | | 235117 | | 23410 | | 197509 | | 14198 |
| 02050 Demolition & Removal | | 14000 | | | | 7400 | | 6600 |
| 02221 Earthwork for Structures | | 119710 | | 29800 | | 64510 | | 25400 |
| 02222 Earthwork for Utilities | | 106423 | | 22000 | | 66054 | | 18369 |
| 02233 Base Course for Pavement | | 20789 | | 13289 | | 4500 | | 3000 |
| 02660 Exterior Water System | | 56900 | | 35000 | | 21900 | | |
| 02720 Storm Drainage System | | 60029 | | 43812 | | 15467 | | 750 |
| 02730 Exterior Sanitary Sewer | | 11290 | | 5490 | | 4000 | | 1800 |
| 02930 Turf | | 13561 | | 9000 | | 4561 | | |
| 02950 Trees, Plants, Grnd Covr | | 15511 | | 12311 | | 3000 | | 200 |
| 03300 Cast-in-place Concrete | | 189023 | | 115900 | | 55100 | | 18023 |
| 05120 Structural Steel | | 284724 | | 208790 | | 59423 | | 16511 |
| 05500 Metal Fabrications | | 36062 | | 23671 | | 12391 | | |
| 06100 Rough Carpentry | | 96912 | | 51000 | | 45912 | | |
| 06200 Finish Carpentry | | 40843 | | 31666 | | 9177 | | |
| 07160 Dampproofing | | 22733 | | 12933 | | 9800 | | |
| 07212 Rigid Insulation | | 1145 | | 545 | | 600 | | |
| 07230 Perimeter & Slab Insul | | 1190 | | 567 | | 623 | | |
| 07232 Ceiling, Wall, Floor Ins | | 27466 | | 12000 | | 15466 | | |
| 07412 Preformed Metal Roofing | | 121121 | | 91000 | | 25121 | | 5000 |
| 07600 Flashing & Sheetmetal | | 5925 | | 2988 | | 2937 | | |
| 07920 Sealants | | 1100 | | 700 | | 400 | | |
| 08110 Steel Doors & Frames | | 9146 | | 6090 | | 3056 | | |
| 08210 Wood Doors | | 25289 | | 18778 | | 6511 | | |
| 08300 Special Doors | | 5800 | | 4000 | | 1800 | | |
| 08400 Entrance & Storefront | | 3053 | | 2000 | | 1053 | | |
| 08500 Metal Windows | | 36300 | | 30300 | | 6000 | | |
| 08710 Finish Hardware | | 7200 | | 6000 | | 1200 | | |
| 09100 Metal Support System | | 79890 | | 37800 | | 42090 | | |
| 09250 Gypsum Board | | 53800 | | 21344 | | 32456 | | |
| 09500 Acoustical Treatment | | 94786 | | 45332 | | 49454 | | |
| 09660 Resilient Flooring | | 31105 | | 13434 | | 17671 | | |
| 09680 Carpet | | 40830 | | 27541 | | 13289 | | |
| 09900 Painting | | 59500 | | 23000 | | 36500 | | |
| 10200 Louvers | | 5500 | | 3200 | | 2300 | | |
| 10800 Toilet & Bath Accessorie | | 36303 | | 25300 | | 11003 | | |
| 11400 Hospital Equipment | | 30360 | | 21000 | | 9360 | | |
| 12300 Hospital Casework | | 35000 | | 25000 | | 10000 | | |

ROCK POINT WAREHOUSE

12/12/91 Final Est

CSI Level 2 Type B (Summary)

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| | TOTAL | | MATERIAL | | LABOR | | EQUIP | |
|---|--------|------------|----------|--------|-------|--------|-------|--------|
| | \$/U | COST | \$/U | COST | \$/U | COST | \$/U | COST |
| CSI | | | | | | | | |
| CSI SUMMARY (cont) | | | | | | | | |
| 15010 Mechanical Gen Requiremt | | 5344 | | 1254 | | 4090 | | |
| 15200 Noise, Vibration, Seismc | | 5937 | | 3200 | | 2737 | | |
| 15250 Insulate Mechanical Sys | | 23057 | | 8700 | | 14357 | | |
| 15330 Fire Exting Sprink Sys | | 76655 | | 32981 | | 43674 | | |
| 15400 Plumbing | | 195682 | | 58900 | | 136782 | | |
| 15492 Fuel Gas Piping | | 33900 | | 26010 | | 7890 | | |
| 15653 Unitary AC Systems | | 11471 | | 9000 | | 2471 | | |
| 15813 Warm Air Heating Systems | | 37454 | | 17654 | | 19800 | | |
| 15850 Air Handling Equipment | | 24286 | | 13409 | | 10877 | | |
| 15895 Ductwork and Accessories | | 47963 | | 24512 | | 23451 | | |
| 15971 Space Temperature Contrl | | 27541 | | 14090 | | 13451 | | |
| 15996 Test & Balance HVAC | | 10256 | | 256 | | 10000 | | |
| 16010 Electrical Gen Requiremt | | 2487 | | 500 | | 1987 | | |
| 16375 Underground Electrical | | 9599 | | 4400 | | 3701 | | 1498 |
| 16401 Interior Wiring Systems | | 142000 | | 68000 | | 74000 | | |
| 16510 Interior Lighting | | 150450 | | 80322 | | 70128 | | |
| 16530 Exterior Lighting | | 8300 | | 4000 | | 4300 | | |
| 16722 Interior Fire Alarm | | 8300 | | 4900 | | 3400 | | |
| 16740 Telephone Distribution | | 9395 | | 4000 | | 5395 | | |
| 16760 Intercom Systems | | 8030 | | 4530 | | 3500 | | |
| TOTAL DIRECT COST | | 1502897 | | 673897 | | 723000 | | 106000 |
| TOTAL with GEN CONTR'S OVERHEAD, PROFIT & BOND | 10 PCT | 1653186.7 | | | | | | |
| TOTAL with DESIGN, EST and BID CONTINGENCY | 1 PCT | 1669718.57 | | | | | | |
| TOTAL with ESCALATION to MIDPOINT CONST 6/92 | 2 PCT | 1703000 | | | | | | |

ROCK POINT WAREHOUSE

12/12/91 Final Est

CSI Level 2 Type B (Detail)

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| 12/12/91 Final Est | | | | | | | | | | | | |
|--------------------|-------|--------------------------------|------|------|-------|------|----------|------|-------|------|-------|------|
| CSI | 02221 | Earthwork for structures | Q | UNIT | TOTAL | | MATERIAL | | LABOR | | EQUIP | |
| | | | | | \$/U | COST | \$/U | COST | \$/U | COST | \$/U | COST |
| | | Reduce levels and haul | 657 | cy | 5.50 | 3614 | | | 3.00 | 1971 | 2.50 | 1643 |
| | | Rough grade site | 7000 | sy | 1.00 | 7000 | | | 0.50 | 3500 | 0.50 | 3500 |
| | | Trench excav for strip footing | 44 | cy | 9.32 | 410 | | | 6.10 | 268 | 3.22 | 142 |
| | | 6" gravel base for footings | 28 | cy | 17.50 | 490 | | 336 | 3.00 | 84 | 2.50 | 70 |
| | | Excavate for elevator pit | 17 | cy | 4.00 | 68 | | | 2.00 | 34 | 2.00 | 34 |
| | | 6" gravel base for elev pit | 2 | cy | 21.32 | 43 | | 24 | 6.10 | 12 | 3.22 | 6 |
| | | Backfill native to footgs | 30 | cy | 6.20 | 186 | | | 4.20 | 126 | 2.00 | 60 |
| | | Backfill native to elev pit | 6 | cy | 9.69 | 58 | | | 6.35 | 38 | 3.34 | 20 |
| | | struct fill, compact | 39 | cy | 22.12 | 863 | | 459 | 7.00 | 273 | 3.34 | 130 |
| | | 6" gravel under slab, comp | 28 | cy | 9.69 | 271 | | | 6.35 | 178 | 3.34 | 94 |
| | | Haul excess excavation | 50 | cy | 22.12 | 1106 | | 589 | 7.00 | 350 | 3.34 | 167 |
| | | Storm drain headwall: excav | 45 | cy | 5.50 | 248 | | | 3.00 | 135 | 2.50 | 113 |
| | | rip-rap at headwall | 32 | cy | 28.20 | 902 | | 640 | 4.20 | 134 | 4.00 | 128 |
| | | backfill native at headwall | 45 | cy | 8.22 | 370 | | | 5.00 | 225 | 3.22 | 145 |
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Appendix F FORMS

A. General

This Appendix is intended to familiarize the A/E with forms used by FD&CC for managing A/E and construction contracts.

B. A/E Fee Proposal Form:

This form is used for the A/E to calculate and submit their fee for the project and is available in spreadsheet format from the EIC or Contracting Officer. See Appendix F.1 for an example.

C. Construction Management Forms:

This section describes the use of the various forms to be used by A/E's and Contractors during construction administration. An Index and Copies of the actual forms are contained in Appendix F.1.

Submittal Transmittal Letter, (Form CM-04)

Division One, Section 01340, requires the contractor to transmit all submittals on this form. Information used to fill out the form is self-explanatory. Suggested practices on how to best use the form are listed below:

Table F.1: Suggested Practices for Using the Submittal Transmittal Letter

| <i>Issue:</i> | <i>Suggested Practice:</i> |
|-----------------------------|---|
| Submittal Numbering | Submittal Numbers should be sequential and independent of section or paragraph numbering. |
| Resubmittals | Resubmittals should use the sequential number assigned to the original submittal and assign a letter behind the number for each resubmission. Example; Original submittal number 103, first resubmission number 103A, second resubmission numbered 103B, etc. |
| Limiting Items | Each submittal should address specific items referenced back to a section and paragraph(s). Each transmittal letter should have a single item or small logical groupings. Avoid mixing section numbers and mass submissions on a single transmittal. |
| Contractor Review | It is the Prime Contractor's responsibility to review and sign each submittal. This review should ensure the submittals accuracy and completeness. |
| Variations | Any variation in the submitted item and the contract should be clearly called out on the Submittal Transmittal Letter. |
| Review | Each submittal should be reviewed in the shortest time frame and marked "Approved", "Disapproved", or "Approved as Noted". Any disapproved or approved as noted submittals should clearly identify the reason why the submittal was not approved. If practical, the A/E should contract the PM to discuss disapproved submittals. |
| Questions to the Contractor | All questions on submittals should be sent via the Project Manager. |

A flow chart of the material submittal process is contained in Exhibit F.1 (A/E Submittals) at the end of this Appendix.

Submittal Log (Form CM-05):

A submittal log is used to track submittals. Appendix F.1 contains an example of a Submittal Log form. Codes to be used in the Submittal Log are contained in Table F.2 and Suggested Practices on how to use the log are contained in Table F.3.

Table F.2: Submittal Log Codes

| Code: | Definition: |
|--------------|--|
| AS | As- Builts |
| CA | Calculations |
| CC | Certificate of Compliance |
| ES | Extra Stock |
| FT | Field Test |
| MD | Manufacturer's Data |
| NR | Name/Factory Authorized Representative |
| NT | Notification |
| OM | Operations and Maintenance Manuals |
| PP | Work Plan/Procedure |
| PC | Pre-Construction |
| QA | Quality Assurance |
| RD | Record |
| SA | Sample |
| SD | Shop Drawing |
| SI | Installed Sample/Mockup |
| SV | Survey |
| TD | Test Data |
| WA | Warranty |

Table F.3: Requirements for Using the Submittal Log (CM-05)

| Issue: | Requirements: |
|--|---|
| Format | All Submittal Logs may be submitted as an Excel or Access document. |
| Tracking Submittals | The submittal log tracks submittals and with calculation, filter and sort capabilities available on the software packages can focus on specific groupings such as late submittals, specific reviewers, specification sections, types of submittals, etc. |
| Use as an As-Built | The Submittal Log shall be updated and submitted by the contractor along with each payment request. The purpose of this submission is to elevate the need and requirement of complete submittals and to ensure the contractor's intentions match the contract requirements. |
| Used for Site Control | The COR can use the Submittal Log to verify the accuracy of field records and ensure products and systems being installed have been approved. |
| Combining Submittal Log with Testing Log | Because of the filter and sort capabilities on the software the Submittal Log can be combined with the Testing Log. |

Design Clarification Request (Form CM-06):

Division One, Section 01040 identifies Form CM-06, Design Clarification Requests as the vehicle to identify and track contractors, field, and/or design clarifications. DCRs may also be called Request for Information (RFI) within the industry.

DCRs may be developed at any level, but should always be processed through the COR and PM. A Flow Chart showing the DCR process is contained in Exhibit F.2 at the end of this Appendix. The objective of a DCR is to clarify the design at the lowest level in the most efficient manner. DCRs may be answered by the COR, PM, EIC, A/E or any of the design engineers. Suggested Practices for using DCRs are provided in Table F.4.

Table F.4: Requirements for Using Design Clarification Requests (CM-06)

| Issue: | Requirements: |
|----------------------------|--|
| Content | A DCR shall be complete self-contained and if necessary include any sketches, drawings, cut-sheets, etc. to clearly identify the clarification being sought. |
| Question | Each DCR should have a single clear and concise clarification request. This request should not be limited to the design, but to any issue that may arise during construction. Whenever possible make references directly to specification or drawings. |
| Answer | All answers should also be clear and concise and should not alter the contract requirements. If the DCR identifies an error or omission, immediately notify the PM to determine the limits and content of the fix. DCRs may be used as the basis for modifications to the contract via a Contract Modification Request (CMR). |
| Numbering | All numbers shall be assigned sequentially by the COR only. |
| Tracking | The contractor, COR, and PM should each have a log. |
| Review | The project superintendent shall review and sign or initial all DCRs prior to submitting them to the COR. The COR shall answer any DCRs that can be answered at the field level or ensure the clarity of the request prior to forwarding it to the PM. The PM may then answer or disseminate the DCR to the appropriate party for answering. |
| Substitutions for Material | DCRs are not to be used to fulfill submittal requirements or to request substitutions or waiver's to the contract. |

Design Clarification Request Log (Form CM-07):

Individual DCR Logs should be managed by the contractor, COR, PM and A/E. An example of a DCR Log form is contained in Appendix F.1. A spreadsheet may also be used.

Explanation to Prospective Bidders (CM-17)

This form shall be used to document Bidder's Questions. (Maintained by KO).

Bidder's Question Log (CM-18)

This form shall be used to log and track bidder's questions and answers. A copy of all questions and answers should be provided to all bidders prior to bid opening. (Maintained by KO).

Punch List (Form CM-22)

Division One Section 01700, *Contract Closeout*, defines the use of a Punch List. The Punch List is the final work list generated at the Final Inspection. Suggested Practices for its use are contained in Table F.5

Table F.5: Requirements for the Punch List

| Issue: | Requirements: |
|-------------------------------|---|
| Final Inspection | The punch list shall be compiled during the Final Inspection. The inspection party should fill out their inspection results on the Punch List Form and deliver the same to the PM at the conclusion of the inspection. |
| Delivering List to Contractor | The Punch List shall be delivered to the contractor in draft form immediately after the Final Inspection. The official list should be sent to the contractor as soon as possible via a letter from the KO. |
| Preparing the Official List | The official punch list shall be developed from the inspection reports developed during the final inspection and all outstanding Non-Compliance Reports. When developing the list the PM should take care to ensure that all items on the list are included in the contract or any subsequent contract modifications. |
| Checking Items Off | It is the COR's responsibility to follow-up and check-off items on the punch list. |
| Retainage | Generally money will be retained to cover the value of the punch list. This value should be computed as the cost to have another contractor perform the work on the punch list. This may not correlate to the contractor's schedule of values. |
| Non-Compliance Lists | The Punch List is generated at the Final Inspection or at inspection limited to specific area of work as defined by the contract. All other formal and informal inspections should generate Non-Compliance Lists. |

Final Inspection Interiors Checklist (Form CM-23)

This optional form is used as a checklist for the Final Inspection.

Contractor Prepares
Submittal

Contractor

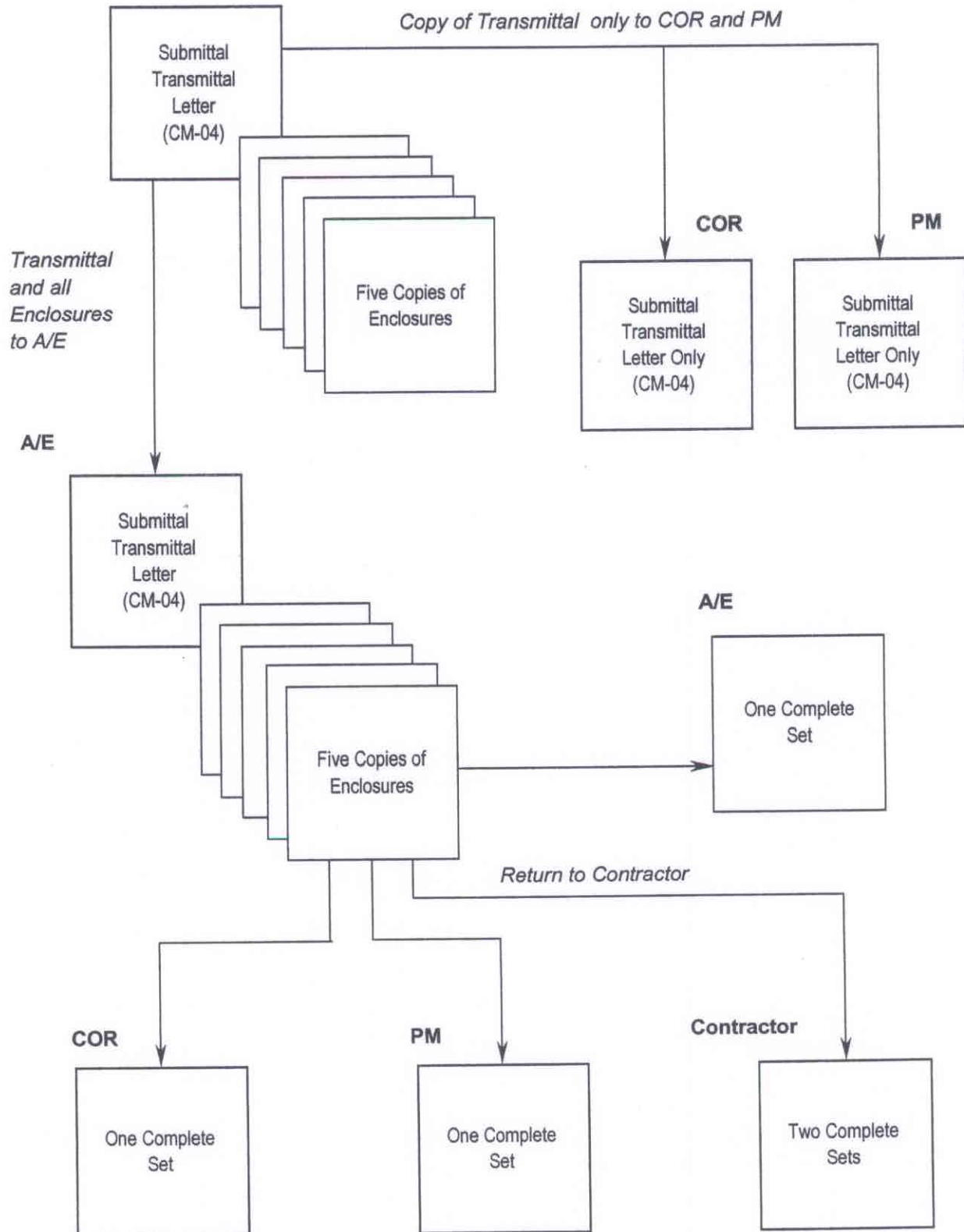


Exhibit F.1 Submittal Process (A/E)

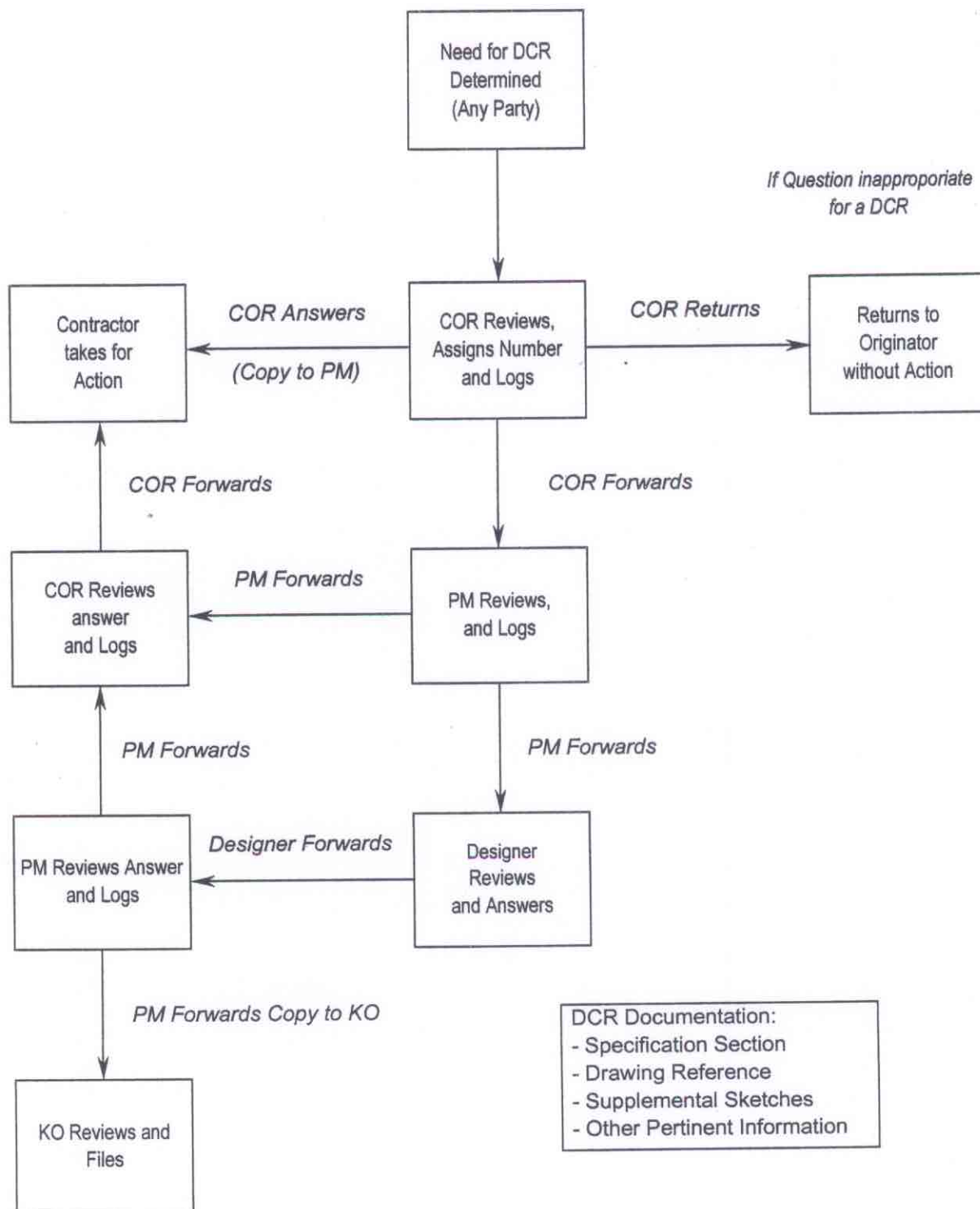


Exhibit F.2 Design Clarification Request Process

APPENDIX F.1 SAMPLE FORMS

Exhibit F.1.1 – A/E Fee Proposal Form

The A/E fee proposal form is used for the A/E to submit their proposal to the Contracting Officer. A copy is included in this appendix.

| | | |
|-------------------|---|-------------------|
| A-E FIRM: | CONSULTANT'S NAMES STRUCT: ELEC: MECH: CIVIL: | PROJ. NO. |
| LOCATION: | | DATE OF ESTIMATE: |
| PROJ TITLE: | | ECCP |
| PROJECT LOCATION: | | |

SECTION A: DESIGN SERVICES SUMMARY

| | | TOTAL SHTS | | PHASE I | | PHASE II | | TOTAL DESIGN | |
|--|--------------|------------|------|---------|-----|----------|-----|--------------|-----|
| | | PHI | PHII | RATE | HRS | COST | HRS | COST | |
| 1. PROJECT MANAGER | | 0 | 0 | | 0 | \$0 | 0 | \$0 | \$0 |
| 2. LANDSC L ARCHITECT | | 0 | 0 | | 0 | \$0 | 0 | \$0 | \$0 |
| | DRAFTSPERSON | | | | 0 | \$0 | 0 | \$0 | \$0 |
| 3. ARCH ARCHITECT | | 0 | 0 | | 0 | \$0 | 0 | \$0 | \$0 |
| | DRAFTSPERSON | | | | 0 | \$0 | 0 | \$0 | \$0 |
| 4. CIVIL CIVIL | | 0 | 0 | | 0 | \$0 | 0 | \$0 | \$0 |
| | DRAFTSPERSON | | | | 0 | \$0 | 0 | \$0 | \$0 |
| 5. STRUCT ENGINEER | | 0 | 0 | | 0 | \$0 | 0 | \$0 | \$0 |
| | DRAFTSPERSON | | | | 0 | \$0 | 0 | \$0 | \$0 |
| MECH ENGINEER | | 0 | 0 | | 0 | \$0 | 0 | \$0 | \$0 |
| | DRAFTSPERSON | | | | 0 | \$0 | 0 | \$0 | \$0 |
| 7. ELEC ENGINEER | | 0 | 0 | | 0 | \$0 | 0 | \$0 | \$0 |
| | DRAFTSPERSON | | | | 0 | \$0 | 0 | \$0 | \$0 |
| 8. SPEC WRITER | | | | | | | 0 | \$0 | \$0 |
| | TYPIST | | | | | | 0 | \$0 | \$0 |
| 9. | | | | | | \$0 | | \$0 | \$0 |
| | | | | | | \$0 | | \$0 | \$0 |
| 10. TOTAL DIRECT LABOR | | | | | | \$0 | | \$0 | \$0 |
| OVERHEAD | X \$ | | | 0 | | \$0 | | \$0 | \$0 |
| 11. TOTAL DIRECT LABOR AND OVERHEAD | | | | | | \$0 | | \$0 | \$0 |
| PROFIT | X \$ | | | 0 | | \$0 | | \$0 | \$0 |
| 12. TOTAL DIRECT LABOR & OH & PROFIT | | | | | | \$0 | | \$0 | \$0 |
| TOTAL FEE FOR DESIGN SERVICES (Phase I + Phase II) | | | | | | | | | \$0 |

| SECTION B: ENGINEERING SERVICES SUMMARY | | | COSTS | |
|---|-----------------|--|---------|----------|
| ITEM | | | PHASE I | PHASE II |
| 1. Conceptual Design Study | (from sheet 8) | | \$0 | |
| 2. Cost Estimating | (from sheet 9) | | \$0 | \$0 |
| 3. Soil Mechanics | (from sheet 9) | | \$0 | |
| 4. Surveys | (from sheet 10) | | \$0 | |
| 5. Engineering Study | (from sheet 10) | | \$0 | |
| 6. Field Investigation | (from sheet 11) | | \$0 | |
| 7. Conferences | (from sheet 12) | | \$0 | \$0 |
| 8. Reproduction and mailing | (from sheet 13) | | \$0 | \$0 |
| 9. Interior Design | (from sheet 14) | | \$0 | \$0 |
| 10. Schematic Narrative | (from sheet 14) | | \$0 | |
| 11. Submittal and test logs | (from sheet 14) | | | \$0 |
| 12. Other services | | | | |
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| TOTAL FEE FOR ENGINEERING SERVICES | | | \$0 | \$0 |

| SECTION C: CONSTRUCTION CONTRACT SUPPORT SERVICES (CCSS) | | | | |
|--|--|-----------|--------|-----|
| ITEM (from sheet 15 and 16) | | | COST | |
| 1. Submittal review | | | | \$0 |
| 2. As-Built drawings | | | | \$0 |
| 3. Maint/operations manuals | | | | \$0 |
| 4. Office consultation | | hrly rate | \$0.00 | |
| TOTAL FEE FOR CONSTRUCTION CONTRACT SUPPORT SERVICES | | | | \$0 |

| SECTION D: FIELD SUPPORT SERVICES | | | | COST | |
|--------------------------------------|---------------------------|-----------|--------|------|-----|
| ITEM (from sheet 16) | | | | | |
| 1. | Attend pre-con conference | | | | \$0 |
| 2. | Attend final inspection | | | | \$0 |
| 3. | Photographic services | | | | \$0 |
| 4. | Construction inspection | hrly rate | \$0.00 | | |
| 5. | Value engineering review | hrly rate | \$0.00 | | |
| 6. | Field consultation | hrly rate | \$0.00 | | |
| TOTAL FEE FOR FIELD SUPPORT SERVICES | | | | | \$0 |

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|---|------|-----------------|-----|
| BASE AWARD: Soil, Survey, Field Inspection | | (SECTION A + B) | \$0 |
| BASE AWARD: Design, Cost Est, Conf, Repro, logs | | (SECTION A + B) | \$0 |
| OPTION I | CCSS | (SECTION C) | \$0 |
| OPTION II | FSS | (SECTION D) | \$0 |
| TOTAL FEE: BASIC, PLUS OPTIONS I, II & III | | | \$0 |

A-E SIGNATURE/DATE _____

EIC SIGNATURE/DATE _____

CONTRACTING OFFICER/DATE _____

| SECTION A: DESIGN SERVICES | PHASE I | | | PHASE II | | |
|---|--------------|------------|----------------|--------------|------------|----------------|
| DISCIPLINE (define all drawing sheets) | # OF SHTS | PRO HRS | SUB-PRO HRS | # OF SHTS | PRO HRS | SUB-PRO HRS |
| A.1. PROJECT MANAGER: | | | | | | |

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|--|---|---|---|---|---|---|
| A.2. LANDSCAPE ARCHITECT: | | | | | | |
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| TOTAL LANDSCAPE ARCH. (Enter on Sheet 1) | 0 | 0 | 0 | 0 | 0 | 0 |

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| A.3. ARCHITECTURAL: | | | | | | |
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| TOTAL ARCHITECTURAL (Enter on Sheet 1) | 0 | 0 | 0 | 0 | 0 | 0 |

| SECTION A: DESIGN SERVICES (CON'T) | | PHASE I | | | PHASE II | | |
|---|--|--------------|------------|----------------|--------------|------------|----------------|
| DISCIPLINE (define all drawing sheets) | | # OF SHTS | PRO HRS | SUB-PRO HRS | # OF SHTS | PRO HRS | SUB-PRO HRS |
| A.4. CIVIL: | | | | | | | |
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| TOTAL CIVIL (Enter on Sheet 1) | | 0 | 0 | 0 | 0 | 0 | 0 |
| A.5. STRUCTURAL: | | | | | | | |
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| TOTAL STRUCTURAL (Enter on Sheet 1) | | 0 | 0 | 0 | 0 | 0 | 0 |

| SECTION A: DESIGN SERVICES (CONT) | PHASE I | | | PHASE II | | |
|--|--------------|------------|----------------|--------------|------------|----------------|
| DISCIPLINE (define all drawing sheets) | # OF SHTS | PRO HRS | SUB-PRO HRS | # OF SHTS | PRO HRS | SUB-PRO HRS |
| A.6. MECHANICAL: | | | | | | |
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| TOTAL MECHANICAL (Enter on Sheet 1) | 0 | 0 | 0 | 0 | 0 | 0 |
| A.7. ELECTRICAL: | | | | | | |
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| TOTAL ELECTRICAL (Enter on Sheet 1) | 0 | 0 | 0 | 0 | 0 | 0 |

| SECTION A: DESIGN SERVICES (CON'T) | | PHASE II | | |
|---|--|--------------|------------|----------------|
| A.8. SPECIFICATIONS/REPORT WRITERS | | # OF SECT | PRO HRS | SUB-PRO HRS |
| DIV 1. GENERAL REQUIREMENTS (USCG PROVIDE/A-E REVIEW) | | X | | |
| DIV.1. SECTION 01560 (USCG PROVIDE/A-E COMPLETE) | | | | |
| DIV 2. SITE WORK | | | | |
| DIV 3. CONCRETE | | | | |
| DIV 4. MASONRY | | | | |
| DIV 5. METALS | | | | |
| DIV 6. WOOD AND PLASTICS | | | | |
| DIV 7. THERMAL AND MOISTURE PROTECTION | | | | |
| DIV 8. DOORS & WINDOWS | | | | |
| DIV 9. FINISHES | | | | |
| DIV 10. SPECIALITIES | | | | |
| DIV 11. EQUIPMENT | | | | |
| DIV 12. FURNISHINGS | | | | |
| DIV 13. SPECIAL CONSTRUCTION | | | | |
| DIV 14. CONVEYING SYSTEMS | | | | |
| DIV 15. MECHANICAL | | | | |
| DIV 16. ELECTRICAL | | | | |
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| TOTAL A.8 (Enter on Sheet 1) | | 0 | 0 | 0 |

SECTION B: ENGINEERING SERVICES

B.1. CONCEPTUAL DESIGN STUDY

| ITEM | # OF SHTS | PRO RATE | PRO HRS | SUB-PRO RATE | SUB-PRO HRS | TOTAL |
|----------------------------------|--------------|-------------|------------|-----------------|----------------|-------|
| 1. DRAWINGS: (define all sheets) | | | | | | |
| | | | | | | \$0 |
| | | | | | | \$0 |
| | | | | | | \$0 |
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| | | | | | | \$0 |
| | | | | | | \$0 |
| SUBTOTAL DRAWINGS | 0 | | 0 | | 0 | \$0 |

| NARRATIVE | # SHTS | PRO RATE | PRO HRS | SUB-PRO RATE | SUB-PRO HRS | TOTAL |
|--------------------|-----------|-------------|------------|-----------------|----------------|-------|
| | | | | | | \$0 |
| | | | | | | \$0 |
| | | | | | | \$0 |
| | | | | | | \$0 |
| | | | | | | \$0 |
| | | | | | | \$0 |
| | | | | | | \$0 |
| | | | | | | \$0 |
| | | | | | | \$0 |
| SUBTOTAL NARRATIVE | 0 | | 0 | | 0 | \$0 |

TOTAL CONCEPTUAL DESIGN STUDY: (Enter on Sheet 2)

\$0

SECTION B: ENGINEERING SERVICES (CONT'D)

| B.2 COST ESTIMATING | PHASE I | | | PHASE II | | |
|-----------------------------------|---------|------|------|----------|------|------|
| | HRS | RATE | COST | HRS | RATE | COST |
| ESTIMATOR | | | | | | |
| PRO | | | \$0 | | | \$0 |
| SUB-PRO | | | \$0 | | | \$0 |
| | | | \$0 | | | \$0 |
| TOTAL PHASE I (Enter on Sheet 2) | | | \$0 | | | |
| TOTAL PHASE II (Enter on Sheet 2) | | | | | | \$0 |

| B.3. SOIL MECHANICS | QTY | UNIT | UNIT COST | SUBTOTAL |
|-----------------------------------|-----|------|-----------|----------|
| FIELD WORK: | | | | |
| GEOTECHNICAL ENGINEER | | | | \$0 |
| TRAVEL TIME | | | | \$0 |
| SITE TIME | | | | \$0 |
| MOB/DEMOB EQUIPMENT | | | | \$0 |
| NO. BORINGS _____ X _____ FT. = | 0 | | | \$0 |
| PITS | | | | \$0 |
| CLEAN EQUIPMENT PER SAMPLE | | | | \$0 |
| LABORATORY WORK/REPORT: | | | | |
| GEOTECHNICAL ENGINEER | | | | \$0 |
| ENVIRONMENTAL ENGINEER | | | | \$0 |
| REVIEW (PRINCIPAL) | | | | \$0 |
| DRAFTSPERSON | | | | \$0 |
| CLERICAL | | | | \$0 |
| REPORT/PRINT/BIND/MAIL (4 copies) | | | | \$0 |
| TESTS: (Define Below) | | | | \$0 |
| ATTERBERG | | | | \$0 |
| CBR | | | | \$0 |
| MECH ANALYSIS | | | | \$0 |
| TPH | | | | \$0 |
| METALS | | | | \$0 |
| VOC | | | | \$0 |
| OTHER: | | | | |
| TRANSPORTATION: | | | | \$0 |
| | | | | \$0 |
| | | | | \$0 |
| PER DIEM | | | | \$0 |
| TOTAL SOILS (Enter on Sheet 2) | | | | \$0 |

SECTION B: ENGINEERING SERVICES (CON'T)

| B.4. SURVEYS | QTY | UNIT COST | SUBTOTAL |
|----------------------------------|-----|-----------|----------|
| FIELD WORK: | | | |
| SUPERVISION | | | \$0 |
| BOAT: 3 DAYS AT \$300 PER DAY | | | \$0 |
| RESEARCH | | | \$0 |
| _____ MAN CREW @ _____ DAYS = | 0 | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| REPORT/DRAWINGS: | | | |
| PRINTS/ MYLARS/ DISKETTES | | | \$0 |
| ENGINEER | | | \$0 |
| DRAFTSPERSON | | | \$0 |
| CLERICAL | | | \$0 |
| | | | \$0 |
| OTHER: | | | |
| TRANSPORTATION: | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| PER DIEM | | | \$0 |
| TOTAL SURVEYS (Enter on Sheet 2) | | | \$0 |

| B.5 ENGINEERING STUDY | | | |
|--|-------|------|-------|
| ITEM/DISCIPLINE | HOURS | RATE | TOTAL |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| TOTAL ENGINEERING STUDY (Enter on Sheet 2) | | | \$0 |

SECTION B: ENGINEERING SERVICES (CON'T)

| B.6 FIELD INVEST. | | COST/ DAY | MAN DAY | SUB TOTAL |
|--------------------|--------------|--------------|------------|--------------|
| PROJECT MANAGER | TRAVEL TIME | \$0.00 | | \$0 |
| | ON SITE TIME | \$0.00 | | \$0 |
| ARCHITECT | TRAVEL TIME | \$0.00 | | \$0 |
| | ON SITE TIME | \$0.00 | | \$0 |
| CIVIL | TRAVEL TIME | \$0.00 | | \$0 |
| | ON SITE TIME | \$0.00 | | \$0 |
| STRUCTURAL | TRAVEL TIME | \$0.00 | | \$0 |
| | ON SITE TIME | \$0.00 | | \$0 |
| MECHANICAL | TRAVEL TIME | \$0.00 | | \$0 |
| | ON SITE TIME | \$0.00 | | \$0 |
| ELECTRICAL | TRAVEL TIME | \$0.00 | | \$0 |
| | ON SITE TIME | \$0.00 | | \$0 |
| | TRAVEL TIME | | | \$0 |
| | ON SITE TIME | | | \$0 |
| | TRAVEL TIME | | | \$0 |
| | ON SITE TIME | | | \$0 |
| SUBTOTAL | | | | \$0 |

| | COST | QTY | SUB TOTAL |
|-----------------|------|-----|--------------|
| TRANSPORTATION: | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| PER DIEM: | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| SUBTOTAL | | | \$0 |

TOTAL FIELD INVESTIGATIONS (Enter on Sheet 2)

\$0

| SECTION B: ENGINEERING SERVICES (CONT'D) | | | MANDAYS | | | | TOTAL COST | |
|---|--------------|--------------|---------|-----|----------|-------|------------|----------|
| B.7 CONFERENCES | | COST/ DAY | PHASE I | | PHASE II | | PHASE I | PHASE II |
| | | | CONCPT | DQR | CDR | FINAL | | |
| PROJ. | TRAVEL TIME | \$0.00 | | | | | \$0 | \$0 |
| MGR. | ON SITE TIME | \$0.00 | | | | | \$0 | \$0 |
| ARCH | TRAVEL TIME | \$0.00 | | | | | \$0 | \$0 |
| | ON SITE TIME | \$0.00 | | | | | \$0 | \$0 |
| CIVIL | TRAVEL TIME | \$0.00 | | | | | \$0 | \$0 |
| | ON SITE TIME | \$0.00 | | | | | \$0 | \$0 |
| STRUCT | TRAVEL TIME | \$0.00 | | | | | \$0 | \$0 |
| | ON SITE TIME | \$0.00 | | | | | \$0 | \$0 |
| MECH | TRAVEL TIME | \$0.00 | | | | | \$0 | \$0 |
| | ON SITE TIME | \$0.00 | | | | | \$0 | \$0 |
| ELEC | TRAVEL TIME | \$0.00 | | | | | \$0 | \$0 |
| | ON SITE TIME | \$0.00 | | | | | \$0 | \$0 |
| | TRAVEL TIME | | | | | | \$0 | \$0 |
| | ON SITE TIME | | | | | | \$0 | \$0 |
| | TRAVEL TIME | | | | | | \$0 | \$0 |
| | ON SITE TIME | | | | | | \$0 | \$0 |
| SUBTOTAL | | | | | | | \$0 | \$0 |

| | COST | QTY CONCPT | QTY DQR | QTY CDR | QTY FINAL | PHASE I COST | PHASE II COST |
|-----------------|------|---------------|------------|------------|--------------|-----------------|------------------|
| TRANSPORTATION: | | | | | | \$0 | \$0 |
| | | | | | | \$0 | \$0 |
| | | | | | | \$0 | \$0 |
| | | | | | | \$0 | \$0 |
| | | | | | | \$0 | \$0 |
| PER DIEM: | | | | | | \$0 | \$0 |
| | | | | | | \$0 | \$0 |
| | | | | | | \$0 | \$0 |
| | | | | | | \$0 | \$0 |
| | | | | | | \$0 | \$0 |
| SUBTOTAL | | | | | | \$0 | \$0 |

| | | |
|---|-----|-----|
| TOTAL PHASE I CONFERENCES (Enter on Sheet 2) | \$0 | |
| TOTAL PHASE II CONFERENCES (Enter on Sheet 2) | | \$0 |

SECTION B: ENGINEERING SERVICES (CON'T)
B.8. REPRODUCTION AND MAILING

| | | | | QTY | UNIT COST | TOTAL |
|--|--------------|----------|--|-----|-----------|-------|
| ***** CONCEPTUAL STUDY ***** | | | | | | |
| DRAWINGS: | _____ SHTS X | SETS = | | 0 | | \$0 |
| NARRATIVE: DESIGN BASIS | _____ SHTS X | COPIES = | | 0 | | \$0 |
| COST ESTIMATE: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| ENGINEERING REPORT: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| MAILING: | | | | | | \$0 |
| ***** SCHEMATIC SUBMITTAL ***** | | | | | | |
| DRAWINGS: | _____ SHTS X | SETS = | | 0 | | \$0 |
| NARRATIVE: DESIGN BASIS | _____ SHTS X | COPIES = | | 0 | | \$0 |
| COST ESTIMATE: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| ENGINEERING REPORT: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| MAILING: | | | | | | \$0 |
| ***** CORRECTED SCHEMATIC SUBMITTAL ***** | | | | | | |
| DRAWINGS: | _____ SHTS X | SETS = | | 0 | | \$0 |
| NARRATIVE: DESIGN BASIS | _____ SHTS X | COPIES = | | 0 | | \$0 |
| COST ESTIMATE: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| ENGINEERING REPORT: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| MAILING: | | | | | | \$0 |

| | | | |
|--|--|--|------------|
| TOTAL PHASE I (CONCEPTUAL + SCHEMATIC) (Enter on Sheet 2) | | | \$0 |
|--|--|--|------------|

| | | | | | | |
|--|--------------|----------|--|---|--|-----|
| ***** PROGRESS REVIEW ***** | | | | | | |
| DRAWINGS: | _____ SHTS X | SETS = | | 0 | | \$0 |
| SPECIFICATIONS: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| COST ESTIMATE: | | | | | | \$0 |
| | | | | | | \$0 |
| ***** 100% DESIGN ***** | | | | | | |
| DRAWINGS: | _____ SHTS X | SETS = | | 0 | | \$0 |
| SPECIFICATIONS: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| COST ESTIMATE: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| SUBMITTAL LOG: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| CALCULATIONS | | | | | | \$0 |
| ***** ORIGINALS (FIRST SUBMITTAL) ***** | | | | | | |
| DRAWINGS: | _____ SHTS X | SETS = | | 0 | | \$0 |
| SPECIFICATIONS: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| COST ESTIMATE: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| SUBMITTAL LOG: | _____ SHTS X | COPIES = | | 0 | | \$0 |
| ORIG. MYLAR PLOTTINGS: | _____ SHTS X | 1 SET = | | 0 | | \$0 |
| ORIG. PRINTED SPECIFICATIONS: | _____ SHTS X | 1 COPY = | | 0 | | \$0 |
| CAD DISKS: | | | | | | \$0 |
| CALCULATIONS: | | | | | | \$0 |

| | | | |
|--|--|--|------------|
| TOTAL PHASE II (PROG. + 100% + ORIGINALS) (Enter on Sht. 2) | | | \$0 |
|--|--|--|------------|

SECTION B: ENGINEERING SERVICES (CON'T)
B.9. INTERIOR DESIGN

| | | RATE | | PHASE I | | PHASE II | | TOTL DESIGN | |
|--|------------|------|---------|---------|-------|----------|-------|-------------|-------|
| ITEMS | TOTAL SHTS | PRO | SUB PRO | HRS | COSTS | HRS | COSTS | HRS | COSTS |
| FURNITURE PLAN | | | | | \$0 | | \$0 | 0 | \$0 |
| | | | | | \$0 | | \$0 | 0 | \$0 |
| PRESENTATION BOARD, FURNITURE | | | | | \$0 | | \$0 | 0 | \$0 |
| | | | | | \$0 | | \$0 | 0 | \$0 |
| PRESENTATION BOARD, ARCH COLOR | | | | | \$0 | | \$0 | 0 | \$0 |
| | | | | | \$0 | | \$0 | 0 | \$0 |
| CATALOG CUTS | | | | | \$0 | | | 0 | \$0 |
| BUDGET ESTIMATE | | | | | \$0 | | | 0 | \$0 |
| FURNITURE LIST | | | | | \$0 | | | 0 | \$0 |
| PROCUREMENT DOCUMENTS | | | | | | | \$0 | 0 | \$0 |
| | | | | | | | \$0 | 0 | \$0 |
| | | | | | \$0 | | \$0 | 0 | \$0 |
| | | | | | \$0 | | \$0 | 0 | \$0 |
| TOTAL INTERIOR DESIGN (Enter Sheet 2 Line B.9) | | | | PH I | \$0 | PH II | \$0 | TOTL | \$0 |

| | RATE | | SCHEMATIC NARRATIVE | | | | SUBMITTAL LOGS | | | |
|--|--------|---------|---------------------|---------|-------------|------------|----------------|---------|-------------|-------------|
| B.10. SCH NAR B.11. SUB/TST LOGS | PRO | SUB PRO | NO. OF PAGES | PRO HRS | SUB PRO HRS | TOTAL COST | NO. SPEC | PRO HRS | SUB PRO HRS | TOTAL COSTS |
| LANDSCAPE | \$0.00 | \$0.00 | | | | \$0 | | | | \$0 |
| ARCH | \$0.00 | \$0.00 | | | | \$0 | | | | \$0 |
| CIVIL | \$0.00 | \$0.00 | | | | \$0 | | | | \$0 |
| STRUCT | \$0.00 | \$0.00 | | | | \$0 | | | | \$0 |
| MECH | \$0.00 | \$0.00 | | | | \$0 | | | | \$0 |
| ELEC | \$0.00 | \$0.00 | | | | \$0 | | | | \$0 |
| | | | | | | \$0 | | | | \$0 |
| | | | | | | \$0 | | | | \$0 |
| | | | | | | \$0 | | | | \$0 |
| | | | | | | \$0 | | | | \$0 |
| | | | | | | \$0 | | | | \$0 |
| | | | | | | \$0 | | | | \$0 |
| TOTAL SCHEM NARRATIVE (Enter on Sheet 2) | | | | | | \$0 | | | | |
| TOTAL SUBMITTAL LOGS (Enter on Sheet 2) | | | | | | | | | | |
| | | | | | | | | | | |

SECTION C: CONSTRUCTION CONTRACT SUPPORT SERVICES

| C.1. SUBMITTAL REVIEW | | NO. SHTS | PRO HRS | PRO HRLY RATE | SUB HRS | SUB HRLY RATE | SUBTOTAL |
|-----------------------------------|---------------|----------|---------|---------------|---------|---------------|----------|
| SUBMITTAL/SHOP DRAWING REVIEW: | LANDSCAPE | | | \$0.00 | | \$0.00 | \$0 |
| | ARCHITECTURAL | | | \$0.00 | | \$0.00 | \$0 |
| | CIVIL | | | \$0.00 | | \$0.00 | \$0 |
| | STRUCTURAL | | | \$0.00 | | \$0.00 | \$0 |
| | MECHANICAL | | | \$0.00 | | \$0.00 | \$0 |
| | ELECTRICAL | | | \$0.00 | | \$0.00 | \$0 |
| | | | | | | | \$0 |
| PRICE SCHEDULE REVIEW | | | | | | | \$0 |
| NETWORK ANALYSIS REVIEW | | | | | | | \$0 |
| | | | | | | | \$0 |
| TOTAL (Enter on Sheet 2) | | | | | | | \$0 |

| C.2 AS-BUILT DRAWINGS | | NO. SHTS | PRO HRS | PRO HRLY RATE | SUB HRS | SUB-PRO RATE | SUBTOTAL |
|---|--|----------|---------|---------------|---------|--------------|----------|
| LANDSCAPE ARCHITECTURAL CIVIL STRUCTURAL MECHANICAL ELECTRICAL | | | | \$0.00 | | \$0.00 | \$0 |
| | | | | \$0.00 | | \$0.00 | \$0 |
| | | | | \$0.00 | | \$0.00 | \$0 |
| | | | | \$0.00 | | \$0.00 | \$0 |
| | | | | \$0.00 | | \$0.00 | \$0 |
| | | | | \$0.00 | | \$0.00 | \$0 |
| TOTAL (Enter on Sheet 2) | | | | | | | \$0 |

| C.3 MAINT & OPER MANUALS | | PRO HOURS | PRO HRLY RATE | SUB HRS | SUB-PRO RATE | SUBTOTAL |
|--|-----------------|-----------|---------------|---------|--------------|----------|
| a. Manual Review: | PROJECT MANAGER | | \$0.00 | | | \$0 |
| | MECHANICAL | | \$0.00 | | \$0.00 | \$0 |
| | ELECTRICAL | | \$0.00 | | \$0.00 | \$0 |
| | | | | | | \$0 |
| SUBTOTAL MAINT & MANUALS | | | | | | \$0 |
| b. Inst to CG Personnel | | | | | | |
| discipline: | travel time | | | | | \$0 |
| | on site time | | | | | \$0 |
| | | | | | | \$0 |
| discipline: | travel time | | | | | \$0 |
| | on site time | | | | | \$0 |
| | | | | | | \$0 |
| discipline: | travel time | | | | | \$0 |
| | on site time | | | | | \$0 |
| | | | | | | \$0 |
| TRANSPORTATION: | | | | | | \$0 |
| | | | | | | \$0 |
| PER DIEM: | | | | | | \$0 |
| | | | | | | \$0 |
| SUBTOTAL | | | | | | \$0 |
| TOTAL MAINTENANCE AND OPERATING MANUALS (Enter on Sheet 2) | | | | | | \$0 |

SECTION C: CONSTRUCTION CONTRACT SUPPORT SERVICES

C.4 OFFICE CONSULTATION PROFESSIONAL RATE

SECTION D: FIELD SUPPORT SERVICES

| D.1 PRE-CON CONFERENCE D.2 FINAL INSPECTION | | PRE-CON CONFERENCE | | | CONSTRUCTION + FINAL INSPECTION | | |
|--|--------------|--------------------|------|------|------------------------------------|------|------|
| | | MD | RATE | COST | MD | RATE | COST |
| DISCIPLINE: | TRAVEL TIME | | | \$0 | | | \$0 |
| | ON SITE TIME | | | \$0 | | | \$0 |
| DISCIPLINE: | TRAVEL TIME | | | \$0 | | | \$0 |
| | ON SITE TIME | | | \$0 | | | \$0 |
| DISCIPLINE: | TRAVEL TIME | | | \$0 | | | \$0 |
| | ON SITE TIME | | | \$0 | | | \$0 |
| DISCIPLINE: | TRAVEL TIME | | | \$0 | | | \$0 |
| | ON SITE TIME | | | \$0 | | | \$0 |
| DISCIPLINE: | TRAVEL TIME | | | \$0 | | | \$0 |
| | ON SITE TIME | | | \$0 | | | \$0 |
| DISCIPLINE: | TRAVEL TIME | | | \$0 | | | \$0 |
| | ON SITE TIME | | | \$0 | | | \$0 |
| DISCIPLINE: | TRAVEL TIME | | | \$0 | | | \$0 |
| | ON SITE TIME | | | \$0 | | | \$0 |
| DISCIPLINE: | TRAVEL TIME | | | \$0 | | | \$0 |
| | ON SITE TIME | | | \$0 | | | \$0 |
| TRANSPORTATION: | | QTY | RATE | COST | QTY | RATE | COST |
| | | | | \$0 | | | \$0 |
| | | | | \$0 | | | \$0 |
| | | | | \$0 | | | \$0 |
| | | | | \$0 | | | \$0 |
| PER DIEM | | | | \$0 | | | \$0 |
| | | | | \$0 | | | \$0 |
| | | | | \$0 | | | \$0 |
| TOTAL PRE-CON CONFERENCE (Enter on Sht 3) | | | | \$0 | | | |
| TOTAL FINAL INSPECTION (Enter on Sheet 3) | | | | | | | \$0 |

| D.3 PHOTOGRAPHIC SERVICES | HRS | RATE | COST |
|--|-----|------|------|
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| | | | \$0 |
| TOTAL PHOTOGRAPHIC SERVICES (Enter on Sheet 3) | | | \$0 |

| | |
|--|--|
| D.4 CONSTRUCTION INSPECTION - PROFESSIONAL RATE | |
| D.5 VALUE ENGINEERING REVIEW - PROFESSIONAL RATE | |
| D.6 FIELD CONSULTATION - PROFESSIONAL RATE | |

Table F.1.1: Index of Construction Management Forms

| <i>Form</i> | <i>Form Title</i> | <i>Type</i> | | |
|---------------------------|---|-------------|----------------|-------------|
| | | Blank Form | Automated Form | Spreadsheet |
| CM-01 CM-01A CM-01B | COR's Daily Progress Report Instructions for CM-01 Continuation Sheet for CM-01 | X | X | |
| CM-02 CM-02A | COR's Weekly Progress Report Continuation Sheet for CM-02 | X | X | |
| CM-03 | Contractor's Daily Progress Report | X | X | |
| CM-04 | Submittal Transmittal Letter | X | X | |
| CM-05 | Submittal Log | X | | X |
| CM-06 | Design Clarification Request | X | X | |
| CM-07 | Design Clarification Request Log | X | | X |
| CM-08 | Testing Report | X | X | |
| CM-09 | Testing Log | X | | X |
| CM-10 | Field Adjustment Record | X | X | |
| CM-11 | Field Adjustment Log | X | | X |
| CM-12 | Notice of Non-Compliance | X | X | |
| CM-13 | Non-Compliance Check-Off List | X | | X |
| CM-14 | Daily Time & Material Report | X | X | |
| CM-15 | Order to Suspend or Resume Work | X | X | |
| CM-16 | Constructibility Review Checklist | X | X | |
| CM-17 | Explanation to Prospective Bidders | X | X | |
| CM-18 | Bidder's Question Log | X | | X |
| CM-19 | Initial Project Data | X | X | |
| CM-20 | Trip Report | X | X | |
| CM-21 CM-21A CM-21B | CQC Daily Progress Report Instructions for CM-18 Continuation Sheet for CM-18 | X X X | X X X | |
| CM-22 | Punch List | X | X | |
| CM-23 | Final Inspection Checklist | X | X | |
| CM-24 | Project Closeout Checklist | X | | |
| CM-25 | Project Cost Summary for Capitalization of AC&I Projects | X | X | |
| CM-26 | Project Cost Summary for Capitalization of OE Projects | X | X | |

"**Bold**" Items are referenced in the guide and samples are included on the following pages.

SPECIFICATION SECTION

| | | | | | |
|--|--------------------------|------------------------------------|---|-------------|----------------------|
| CONTRACT NO. DTCG50- | | SUBMITTAL NO. | NEW SUBMITTAL OR PREVIOUS SUBMITTAL NUMBER | | |
| CONTRACTOR: | | REVIEWED & APPROVED BY CONTRACTOR: | | | DATE: |
| Paragraph Number | Description of Materials | Type | Approved | Disapproved | Approved As Noted |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Contractor Comments: Pursuant to Section 1300 of the Technical Specifications and FAR 52.236-21, through submission of this request the contractor certifies that the product/item offered is in compliance with the contract, except as follows: (Specify variances) | | | | | |
| Reviewers Comments: | | | | | |
| TYPED NAME | | SIGNATURE | | DATE | |

SUBMITTAL TRANSMITTAL INSTRUCTIONS

1. Enter the specification number in the appropriate box, top right corner. Only one specification number per submittal.
2. Enter submittal number and paragraph(s) in the appropriate box, one submittal number per form.
3. Keep all submittal numbers in sequence.
4. If this is a resubmittal, so state in the appropriate block with its previous submittal number.
5. Do not use the resubmittal's previous submittal number. Instead, use the next number in the submittal sequence.
- 6.

| Code | Description |
|------|--|
| AS | As- Builts |
| CA | Calculations |
| CC | Certificate of Compliance |
| ES | Extra Stock |
| FT | Field Test |
| MD | Manufacturer's Data |
| NR | Name/Factory Authorized Representative |
| NT | Notification |
| OM | Operations and Maintenance Manuals |
| PP | Work Plan/Procedure |
| PC | Pre-Construction |
| QA | Quality Assurance |
| RD | Record |
| SA | Sample |
| SD | Shop Drawing |
| SI | Installed Sample/Mockup |
| SV | Survey |
| TD | Test Data |
| WA | Warranty |

"Approved" means that the submittal has been approved as submitted and may be incorporated into the work.

"Disapproved" means that the submittal has not been approved as submitted and must be resubmitted into the work.

"Approved as Noted" means that the submittal is approved as subject to compliance with specific remarks on the transmittal form or on the submittal itself.

SUBMITTAL LOG

PROJECT TITLE: _____

PROJECT TITLE: _____

CONTRACT NO: _____

(DESCRIPTION)

[illegible]

DCR NO.

CONTRACTOR: _____

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

SKETCH ATTACHED YES NO

CONTRACTOR'S REP (SIGNATURE) DATE

RESPONSE

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be a standard notebook page.

| | |
|-----------------|------|
| COR (SIGNATURE) | DATE |
|-----------------|------|

PM _____ TL _____ KO _____

DESIGN CLARIFICATION REQUEST LOG

PROJECT TITLE:

CONTRACT NO:

[illegible]

DATE _____

SOLICITATION NO: DTCG50-_____

[illegible]

COMPANY NAME: _____ FAX: _____

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

TIME BEGIN: _____ TIME END: _____

PM_____ TL_____ KO_____

BIDDER'S QUESTION LOG

PROJECT TITLE: _____

CONTRACT NO: _____

[illegible]

PROJECT TITLE: _____

CONTRACT NO: _____

LOCATION/ROOM NO:

[illegible]

COR (SIGNATURE)

DATE _____

CONTRACTOR'S REP (SIGNATURE)

DATE _____

Page ____ of ____

FINAL INTERIOR INSPECTION CHECKLIST

DATE _____

ROOM NUMBER

ROOM NAME

DOORS

☐ Acceptable
☐ Remarks

☐ Clean-Up

☐ Refinish

FRAMES

☐ Acceptable
☐ Remarks

☐ Clean-Up

☐ Repaint

☐ Caulk

HARDWARE

☐ Acceptable
☐ Remarks

☐ Clean-Up

☐ Adjust

☐ Adjust Closer

FLOOR

☐ Acceptable
☐ Remarks

☐ Clean-Up

☐ Remove Mastic

☐ Replace Tile

BASE

☐ Acceptable
☐ Remarks

☐ Clean-Up

☐ Loose, Re-glue

☐ Replace

WALLS

☐ Acceptable
☐ Remarks

☐ Clean-Up

☐ Repaint

☐ Touch-up

CEILING

☐ Acceptable
☐ Remarks

☐ Clean-Up

☐ Replace Tile

☐ Missing Tile

WINDOWS

☐ Acceptable
☐ Remarks

☐ Clean Frame

☐ Clean Glass

☐ Adjust Hardware

PLUMBING

☐ Acceptable
☐ Remarks

☐ Clean Fixtures

☐ Replace Fixture

☐ Correct Leaks

HVAC

☐ Acceptable
☐ Remarks

☐ Clean Diffusers

☐ Correct Noise

☐ Adjust

ELECTRICAL

☐ Acceptable
☐ Remarks

☐ Clean Fixtures

☐ Clean Device

☐ Replace Lamps

EQUIPMENT

☐ Acceptable
☐ Remarks

☐ Clean-Up

☐ Final Connections

OTHER REMARKS:

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Appendix G: Supplemental Scopes of Work

TABLE OF CONTENTS

- G.1 GEOTECHNICAL INVESTIGATIONS**
- G.2 SITE SURVEYS**
- G.3 HYDROGRAPHIC SURVEYS**
- G.4 LEAD SURVEYS**
- G.5 ASBESTOS SURVEYS**
- G.6 PERMIT SUPPORT**

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Appendix G.1**GEOTECHNICAL INVESTIGATIONS****1. General**

When geotechnical investigations are required by the Statement of Work, such information shall be obtained by a competent and reputable firm specializing in such work and satisfactory to FD&CC. Adequate information shall be obtained for use by designers of structures, grading, drainage, disposal fields, and other features.

Generally, prior to negotiation of contract, the A/E will furnish to the KO recommendations as to the extent and type of foundation investigation he proposes. Scope of these services agreed upon will become a part of the contract. A/E shall include cost of this investigation in his total fee proposal.

After completion of the field investigations and laboratory analysis, the A/E shall discuss the results with FD&CCPAC specialists in foundation and materials design. The A/E shall utilize pertinent geotechnical details and design criteria in his design analysis, drawings, and specifications.

2. Deliverables

Deliverables, shall include the following:

- Geotechnical Report including a narrative of the extent of the investigation, findings and recommendations stamped by an engineer licensed for geotechnical engineering in the State in which the work was performed.
- A site plan mylar on which the exploration of locations and boring logs will be shown. The site plan shall show the topography and the coordinate grid. On large projects, the A/E will insert the separate boring log sheet into the final plan set.
- Boring log numbers, log profiles, and boring locations.

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Appendix G.2**SITE SURVEYS****A. General**

All surveying and mapping work will be accomplished by personnel licensed in such work. The A/E will inform EIC of his proposed methods, procedures, and type of equipment to be used, and work will be subject to inspection by government personnel. However, the A-E will retain responsibility for quality of work within limits prescribed in the SOW.

Generally type of work, extent, and accuracy requirements will be prescribed in a government-furnished SOW for each specific project. When specific instructions are not furnished, the following will apply.

1. Control

Basic mapping control, "P" lines for route surveys, as-built control, and cadastral surveys will be conducted to 3rd Order accuracy, both horizontally and vertically, and comply with "Classification, Standards of Accuracy and General Specifications of Geodetic Control Surveys," published by National Ocean Survey. Secondary or supplementary traverses, base lines, or levels may be executed to 4th Order grade A accuracy.

2. General Requirements

Vertical and Horizontal Control. Reference all vertical control to the North America Vertical Datum 1988 (NAVD 88). Reference all horizontal control to the applicable State Plane Coordinate System or the North American Datums of 1927 (NAD '27) or 1983 (NAD '83). Provide conversion or reference to the National Geodetic Vertical Datum of 1929 (NAVD 1929) and Mean Lower Low Water Datum on the drawing. The shoreline of the Mean Lower Low Water and Mean Higher High Water shall be shown on the site survey drawing. State the basis of the survey drawing.

Construction control. Set a minimum 3 capped and referenced iron pin survey points to serve as initial horizontal and vertical survey control for the construction of the proposed project. Set other referenced survey points as necessary to locate easements property boundaries. The location and elevations of these control monuments shall be shown on the site survey drawings.

Accuracy: Meet National Map standards for horizontal and vertical topographic control. Boundary survey shall comply with applicable State standards for accuracy. Topographic accuracy shall be 0.5 feet for contour lines, 0.1 feet for spot elevations and 0.01 feet for elevations of pipe inverts, manholes, and drainage flow lines.

3. Methods

When surveys include legal land surveys or descriptions, work will be accomplished in accordance with bureau of Land Management methods and procedures and state statutes, where appropriate, and by or under supervision of a professional land surveyor holding a current license issued by the state in which work is located. All extension of survey control and mapping accomplished by photogrammetric methods and procedures shall comply with National Map Accuracy Standards.

4. Topographic Survey Information

The topographic survey shall record the topography, all existing site features, all aerial and subsurface utilities including fences, roads, railroads, parking areas, walkways, utility lines, and structures within the limits of the site and 50 feet beyond the boundary limits. Indicate roadways and other paving and paving materials. Include locating and showing the existing utilities and associated information required below, outside the areas of the topographic survey, that may be required to provide services for the proposed facility. Abandoned utilities will be shown as they are best known. Indicate vegetation, including general type and size of trees over 3 inches in diameter in the area to be developed. Indicate all tree and brush lines. Spot elevation accuracy shall be within 0.1 feet. Indicate drainage patterns and appurtenances. Topographic site survey drawing shall show the boundaries of the easements. Indicate the following for the noted utilities:

- a) Water: Location, line size (if possible), material and approximate depth. Locate fire hydrants and valves.
- b) Sanitary sewer and storm drainage systems: Location, line size, material and approximate depth of the existing sanitary mains and manholes. Indicate rim elevations and invert in and out for sanitary sewer and storm drain systems. Locate any lift stations, noting invert in and out, pump discharge pressure, flow rate and float switch levels. Identify drainage paths for a distance of 50 feet minimum outside the proposed Coast Guard site with spot elevations. Locate existing drainage channels and identify flow direction.
- c) Heating fuel system: Location, line size and material, tank type (above or below ground) and size and approximate depth of burial. Show vent pipe locations.
- d) Electrical: Location and type of electrical service (above or below ground) with approximate depth of burial, and any transformers and poles in the area. Provide vault elevations.
- e) Telephone: Location, size and type of lines (above or below ground), approximate depth of burial, and location of phone pedestals. Provide vault elevations.
- f) Gas: Location and type of lines, and approximate depth of burial and location of nearest meter box.

- g) Other utilities: Identify cable TV and other utilities present.
- h) Provide the name and telephone numbers of the local utility services

B. Deliverables

Deliverables shall include the following:

a. Topographic Drawings.

Submit printed and electronic copies of the survey as required in the SOW (See Appendix B.1 for standards for electronic drawings). Topographic and planimetric data shall be plotted to prescribed scale and contour interval on mylar film of approved quality; the following will apply:

- a) Existing contours shall be shown with fine, solid line. Every fifth (guide) contour shall be somewhat heavier and periodically broken for insertion of the contour elevation. In general, identification of guide contours shall follow a regular pattern to allow for "easy map reading."
- b) All survey stations, bench marks, designations, elevations, and coordinates are to be shown on topographic drawings in accordance with standard survey record keeping practices.
- c) Buildings and structures shall be shown with solid lines, omitting cross hatching or complete blanking.
- d) Maps and drawings will be so oriented that north will be toward top of sheet, when practicable, or toward left of sheet if top orientation is impractical.

b. Field Notes.

Original field notes and maps, without alteration, will be furnished to FDCCPAC when the survey is completed. Copies all utility maps, computations, aerial negatives, photographs, easements, legal descriptions, records and documents used in the survey shall be submitted in the final submittal to FD&CC. Provide a printed copy of the point file.

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Appendix G.3 HYDROGRAPHIC SURVEYS**A. General**

Hydrographic surveys shall comply with Appendix C.2.

The hydrographic survey shall provide a record of the existing submarine site conditions and features within the limits specified in the Scope of Work. The information shall include the following:

- a) Elevation contours of the basin bottom at contour intervals of one foot.
- b) Identify location of riprap (including top and toe) or any other hard sub-surface features and all significant structures in/over the water (including piles, decking, dolphins, etc.).
- c) Provide the tide information listed below:
 1. Mean high water
 2. Mean low water
 3. Mean higher high water
 4. Mean lower low water
 5. Highest high water
 6. Lowest low water
 7. Mean tide level

B. Deliverables

See Section D above.

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Appendix G.4 LEAD SURVEYS

A. General

To safeguard against worker exposure to lead, the A/E shall have a Certified Lead Inspector perform a Total Lead-Based Paint survey on all areas of the project to be renovated or disturbed. The survey methods shall be in accordance with U.S. Department of Housing and Urban Development (HUD) Guidelines for Evaluation and Control of Lead-Based Paint Hazards in Housing, June 1995, and revised in December 1997. XRF analyzers shall be used to measure the lead content of painted surfaces. Spectrum analyzer values between 0.4 and 1.2 mg/cm² are inconclusive and require samples to be submitted for laboratory analysis. The number of samples to be taken will vary according to the conditions, but sufficient samples shall be taken to assure that all lead-containing paint that may be disturbed as part of this project is identified and documented. The sample bags or containers shall be sealed and sent to a laboratory certified by the Environmental Lead Laboratory Accreditation Program (ELLAP).

For disposal of lead containing construction debris in projects including total or partial demolition, the A/E designer will also have a Certified Lead Inspector analyze a representative core sampling for Toxicity Characteristic Leachate Procedure (TCLP) using EPA SW-846 or equal EPA approved procedure. Subsamples should be taken from walls, windows, floors, ceiling, door frames, and other building components. (The subsamples are normally taken by using a 1-inch drill bit or similar device.) The size of each subsample will be based on the volume of that particular building component relative to the total volume of the anticipated debris. The composite sample must be thoroughly mixed before being analyzed for TCLP. If the test results are below the EPA limit of 5 ppm, the construction debris is considered non-hazardous and can be disposed of at a regular construction landfill (subtitle D). If the test results exceed 5 ppm, the construction debris will come under RCRA hazardous waste regulations and must be disposed of at an industrial landfill (subtitle C).

1. Deliverables

Complete documentation of each survey and all test results are required along with mapping all homogeneous areas and the locations of all sample points to confirm lead-containing paint. Completed forms, field notes, photographs, and all other information including assessments, condition of the paint, and anticipated physical difficulties involved with any abatement action shall be part of the survey report. A photographic record may be used to determine the validity of the proposed corrective actions if deemed necessary. The work shall be conducted under a safety and health plan and in full compliance with all applicable safety and health, and worker protection laws. The survey report shall include as a minimum the following information:

- a. Name and certification documentation of Certified Lead Inspector.
- b. Qualifications of the laboratory.
- c. Types of test analyses conducted.
- d. Plan showing location of samples and homogeneous areas of lead containing paint including the estimated quantity.

- e. Photographs (if used).
- f. Results of both TCLP and total lead analyses in percent concentration of lead in paint and ppm TCLP.
- g. Recommended actions and a detailed cost estimate.

The A/E shall prepare comprehensive drawings and specifications as required for the removal and disposal of lead-containing paint.

Appendix G.5 ASBESTOS SURVEYS**A. General**

The A/E shall perform an asbestos survey of all areas of the project to be demolished, renovated or disturbed in accordance with the requirements of 40 CFR 763 "Asbestos Hazard Emergency Response Act" (AHERA). An EPA certified asbestos inspector, meeting the accreditation requirements of 40 CFR 763 Subpart E (AHERA) and licensed by the State, shall conduct the survey and validate prior surveys. The results of the survey will be used for construction permitting and will be subject to inspection by federal, state and local agencies. Survey and abatement work shall be conducted under a safety and health plan and in full compliance with all applicable safety, health and worker protection regulations.

B. Procedures

The survey will incorporate prior survey information and supplemental testing as necessary and consist of the following four steps:

1. Review existing building records and drawings for references to ACM used in construction, renovation, or repairs. Obtain prior Asbestos Surveys from the activity Asbestos Program Manager or facility manager.
2. Validate prior surveys for the areas to be disturbed and incorporate into the new survey. The inspector shall verify that all suspected Asbestos Containing Material (ACM) has been identified, that site conditions have not changed, and that an adequate number of samples were collected and analyzed to meet 40 CFR 763.86 (AHERA Sampling) requirements. Prior positive results shall be accepted and no further testing is required. If prior results are negative for asbestos, but the number of samples for each suspect homogeneous area do not meet the AHERA sampling requirements, supplemental sampling shall be accomplished. Also ensure that all areas to be affected by the renovation or construction were inspected. "Affected areas" are those internal and external building areas in which renovation or construction activities will likely take place, including lay down areas, and areas in which utilities will be routed (ie; attics, crawl spaces, and above ceilings).
3. Inspect the affected areas in the building(s) to identify those materials that may contain asbestos. Sufficient homogenous areas will be identified to assure that all ACM is identified and documented. Suspect materials shall be tested to the greatest extent possible; however, when determined not practical to sample the material it shall be Presumed Asbestos Containing Material (PACM). The inspector shall document in writing any denial of a request to perform destructive tests. Include in the documentation the reason(s) for not testing and who denied the request. The inspector should seek permission to perform destructive testing from the highest authority available. The survey will include the identification of friable and non-friable ACM and PACM. The locations of all ACM will be determined, reported, and photographed. All floor tile, mastic, transite board, thermal insulation, roof flashing, and felts should be considered as PACM, unless testing proves otherwise.
4. Sample and test the suspected materials identified in Step 2 and 3 in accordance with AHERA Sampling requirements, except that at least three samples of each suspect material shall be taken. Samples will be taken of the various troweled or sprayed on

surfaces, pipes, and boiler insulation, tile, siding, shingles, and other suspect materials. A lab certified by the National Voluntary Laboratory Accreditation Program (NVLAP) using polarized light microscopy (PLM) will analyze samples in accordance with 40 CFR 763.87 (AHERA Analysis). Lab personnel performing sample analysis shall be EPA certified to perform asbestos analysis. When PLM analysis of a sample indicates asbestos content between 1 and 2 percent, the sample shall be point counted. The lab performing the analysis will document the results of each sample analysis.

C. Deliverables

Prepare a report of the survey in accordance with 40 CFR 763.88 (AHERA Assessment) including paragraph (c) and containing the following items:

- a) Identification of prior asbestos surveys available for review by the contractor. Include a brief description of areas surveyed, the date of the survey, and the location where the survey is retained.
- b) A plan showing all homogenous locations of ACM and PACM, the estimated quantity, and sample points. Also note locations where removal of ACM will require temporary relocation of other systems, such as HVAC ducts and piping.
- c) The test results.
- d) Photographs as appropriate.
- e) Any other information, field notes, or forms which provide pertinent data.

The A/E shall prepare comprehensive design drawings and specifications as necessary for abatement of the ACM and PACM. The person preparing the asbestos plans and specifications shall meet EPA accreditation requirements of 40 CFR 763 Subpart E and licensed by the State in which the work is conducted. The design shall show the location(s) of all ACM and PACM and indicate the type and concentration of asbestos in each material. Prepare contract document 00300, Information Available to Bidders, and include the complete survey report as an attachment to this section. Provide an electronic copy of 00300 and the complete report on 3-½ inch disk with the final design submittal.

If no asbestos is found in the building, a finding of no asbestos must be included in the contract documents, with the complete survey report.

Appendix G.6 PERMIT SUPPORT**A. General.**

The majority of projects covered by this guide will take place on Federal Property managed by the Coast Guard. As such, the Coast Guard acts as the "authority having jurisdiction" with regard to municipal or city building or zoning permits – and generally no such permits are required. However, since the Coast Guard is subject to the National Environmental Policy Act (NEPA), projects may require significant environmental review and approval at the Local, State and Federal level. When required by the SOW, the A/E shall complete a review of required permits and/or assist in the preparation, submittal and approval of permit applications.

B. Permitting Plan.

The A/E shall prepare an environmental plan that shall be coordinated with the project environmental assessment or environmental impact statement and shall include all applicable environmental issues and considerations relative to the project scope and site. The A/E shall coordinate through the EIC and FD&CC Environmental Specialist as necessary. The environmental plan shall also be coordinated with the Permit Record of Decision (see para. 3 below) and identify all required permits, notifications, approvals or easements that will be required. Provide names and addresses of permitting agencies and a time schedule for obtaining necessary permits and approvals. The schedule shall identify specific permit milestones (identification of permit requirements and applicable criteria, preparation of applications, obtaining permits) for each permit required in relation to the overall design schedule, with the goal of obtaining all permits prior to the final design submittal.

C. Permitting Record of Decision.

In identifying all required permits, the A/E shall prepare a Permit Record of Decision (PROD) which records the decisions made by the A/E regarding the requirement for any of the various types of permits which may be required in the state where the project is located. The PROD shall list permit special conditions and close-out requirements. The PROD shall be submitted with the first design submittal (schematic or PD) and revised as necessary and re-submitted with the final submittal.

D. Permit Submissions.

The A/E shall obtain all permits and approvals and provide all notifications that are required for the project by Federal, State and local agencies. All effort involved, including but not necessarily limited to preparing applications, obtaining owner/ government signatures, paying all application fees, submitting applications and notifications, coordinating with agencies and responding to their inquiries and comments, and obtaining permits, shall be the A/E's responsibility. Design of the project shall comply with all applicable requirements of the permitting agencies. Permit applications shall be signed and sealed by a professional engineer registered in the state where the project is located. Copies of permit applications

shall be submitted to the EIC at the time the applications are made and not later than the 100% submittal. Permits shall be submitted to the PM with the final design submittal.

E. Permit Requirements.

Design of the Project shall comply with all applicable environmental and storm-water laws, codes, and regulations and the requirements of permitting agencies. The A/E shall include within the contract specifications and drawings all applicable permit conditions and requirements, specifically addressing any and all close-out requirements.